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Introduction

In the process of skill development from the entry level to the elite level, coaches are challenged to find a variety of methods to break performance into isolated skills in order to help athletes reach peak performance. The use of exercises and drills in a gate training or non-gate environment provides the coach with effective tools to increase skill level with variety and imagination.

The number of exercises and drills is limited only by the imagination of the coach. All the tools described in this handbook can be modified for any skier need by manipulating of any of the following variables:

- Terrain (smooth, bumps, gradient of piste)
- Speed
- Turn shape and size (one quarter, one half, three quarters, full, slalom, giant slalom)
- Variation of exercise or drill by adding or deleting variables (equipment, terrain changes, snow conditions etc.)
- Combination of exercises (hoppsving with loose boots and horizontal pole)

By utilizing imagination and having a specific goal in mind, the coach can assist all participants in their adaptation and refinement of skills through the environment of free ski exercises and the use of drills courses in a gate training environment.

The coach must understand some important facts about skill development using drills and exercises:

- Drills must match the growth and development and skill level of the skier (AIM 2)
- The skier must be involved in the learning process. Feedback should be informative and set the wheels of self regulated learning in motion (Teaching & Learning module)

Exercises and drills have one major purpose in mind: to isolate skills that need to be patterned, adapted and then refined in order to enhance performance. Using exercises and drills in gate training allows the participants time to focus on the task and when the task is completed, the participants can reflect on their performance and re-focus for the next task.

With this in mind … ensure that exercises and drills are performed correctly.

"Perfect Practice Makes Perfect"

Coordination
Describes the skier's ability to bring gross and fine motor movements into a common movement or action pattern.

Edging
Describes the skier's ability to use a combination of inclination and angulation to place the ski on edge and utilize the side cut properties of both skis.

Steering
Describes the skier's ability to utilize the fine motor skills and the lower leg and feet to help guide the skis in a specific direction.

Pressure
Describes the skier's ability to load and unload the skis at the appropriate time by utilizing the reverse camber and side cut properties of both skis.

Technical Free Skiing

Drills and Exercises

How to use this Handbook

This handbook is built in three sections. The two first one covers exercises and drills. The last section is about guidelines for basic course setting. In each exercises and drills section you will find a quick reference guide. The guide is designed to help find exercises and drills in free ski environment and in gate training for the appropriate level of skill:

- Entry Level
- Development Level
- Performance Level

ENTRY LEVEL – FUN-damental Stage

The goal of setting gate drills at this stage of development should be to familiarize the skiers with gates and to provide a variety of environments that are fun and challenging yet provide ample opportunity or a high success rate in skill development. It is imperative that the coach remembers growth and maturation limitations at this level when choosing terrain, distances and speed when setting courses. Foam type stubbies and solid poles are recommended at this level for all gate training activities.

DEVELOPMENT LEVEL – Train to Train Stage

The goal of setting gate drills at this stage of development should be to test the skier's ability to transfer skills acquired in a predominantly free ski environment to gate training. Although free ski drills and exercises should still be emphasized, the skiers should be challenged to adapt and refine their skiing skills in an environment oriented more toward tactics and strategic planning.

A variety of gate types is very useful at this level: solid poles, foam stubbies, flex trainers.

PERFORMANCE LEVEL – Train to Compete Stage

The goal of setting gate drills at this stage of development is not only to assist the athletes in their abilities to refine and vary their skill development in the technical components of skiing but in tactics and strategies as well. To that end, gate training should be designed to challenge the athletes to adapt and refine existing skills in tactics and strategies within a more competition-oriented environment. Therefore, the coach must employ more variety in his I her course design, (i.e. short drill courses, full length and competition length courses, rhythm and change of rhythm courses.)

ELITE LEVEL – Train to Win Stage

The goal of setting gate drills at this level of development is to promote an environment that approximates competition as closely as possible. Gate training must test the elite athletes' physical, technical, tactical and mental management skills. Athletes should be encouraged to perform as close to their optimal performance state as possible so they are challenged to become more innovative in their skill development.

Each ability section consists of a list of specific exercises and drills that will assist the coach in selecting drills that will help develop skills in the following areas:

- Stance and Balance
- Timing and Coordination
- Edging
- Steering
- Pressure

Definitions

Stance
Describes a skier's natural posture on the skis in relation to the width of the feet. As further skill development occurs, the skier must develop the ability to adjust the width of stance to suit external conditions or events (SL, GS, SG, DH).

Balance and Movement
planes: forward/backward, vertical, lateral, rotational.
Describes the skier's ability to remain aligned within the musculature and skeletal system so as to maintain **an athletic posture** on the skis. A basic description of a balanced position on skis is as follows:

- Arms forward and open at chest height.
- Shoulders ahead of the knees
- Width of stance to suit event and conditions
- Upper body slightly rolled through the spine
- Knees and ankles slightly flexed
- Balance is felt predominantly through the metatarsal of the feet

Forward/ backward Plane
Describes the ability of the skier to maintain alignment with the feet and upper body in a forward/backward plane during performance

Vertical Plane
Describes the skier's ability to adjust up and down movements during performance.

Lateral Plane
Describes the skier's ability to adjust with of stance and upper body position to balance in a side-to-side manner during performance

Rotational Plane
Describes the skier's ability to control and adjust rotational movements of the larger body joints of the upper and lower body segments. (shoulder and hip joints)

Timing

Describes the skier's ability to determine the precise moment for initiating or completing an action (pole plant, turn initiation, pressure building and release).

Quick Reference Guide - Technical Free Skiing

Entry Level .. FUN-damentals Stage

In general, all exercises and drills listed are to be taught in the most likely successful environment: smooth terrain, flat to moderate (unless otherwise indicated). Participants should be allowed many attempts, and appropriate time on each exercise to develop proficiency (but not boredom!). All drills and exercises can be simplified for the entry level by keeping the environment in their favour: positive, simple, and with clear basic objectives!

Stance/Balanced Movements	**Lateral Balance**	**Forward/backward Balance**
Thousand steps Hoppsving Hands-all-over Fall line skating Rollerblade Boots undone Banana turn Horizontal Pole Variety of terrain and conditions Hip lift Posture Exercise Victory pose Terrain Garden Obstacle Course	Inside ski turns One-ski skiing Wide-to-narrow Hands-all-over Fall line skating Hoppsving Spaghetti Legs Figure 8 skating	Too far Hands-all-over Boots undone Backwards skiing Linked 360's Children's spiess Fall line skating Hoppsving Posture Exercice No poles
Vertical Balance Hoppsving Toes to Sky Jump turns Crud skiing / Powder skiing Bumps	**Line** Follow the Leader Shadow Drill Draw a line Follow the line	**Edging** Inside ski turns Fall line skating Powerplow
Coordination Norwegian pole plant Children's spiess Obstacle course Charleston Synchronized skiing Thousand steps Bump skiing Spaghetti Legs Backwards skiing Pierre's drill	**Coordination .. continued** Linked 360's Powerplow Banana turn Fall line skating Outside boot touch Outside ski only Figure 8 skating Hockey stop	**Pivoting (Steering)** Powerplow Children's spiess Rollerblade
Edging Skills Fall Line Skating Sideslip Rollerblade Spaghetti Legs Pole pinch Line drill Tuck Turns	**Pressure** Banana turn Powerplow Tuck turns Rollerblade Outside boot touch Outside ski Only	

Quick Reference Guide - Technical Free Skiing

Development Level ... Train to Train Stage

Exercises and drills should fill a large percentage of on-snow time for this level of skier. As with the entry level, the environment should facilitate success. All exercises and drills should be trained with a high level of proficiency, and sufficient time should be allocated for this proficiency to develop. Once the youngster has reached a high level of success in an exercise or drill, the difficulty of the task can be increased by taking equipment away (for instance one ski) or by manipulation of the terrain.

Stance/Balanced Movements Thousand steps Hoppsving Step-step arc Vrenni's drill Hit-hit-hit Hands-all-over Fall line skating Rollerblade Boots undone Banana turn Horizontal pole Varied terrain / conditions Hip lift Victory pose Posture exercise Bumps	**Lateral Balance** Vrenni's drill Inside ski turns One-ski skiing Wide-to-narrow Hands-all-over Fall line skating Step-step arc Hoppsving Horizontal pole Figure 8 skating Edge to Edge	**Fore-Aft Balance** Too far Hands-all-over Boots undone Backwards skiing Linked 360's Spiess Fall line skating Hoppsving Obstacle course Hip lift Victory pose Posture exercise No Poles Handle Bar Snow Blades
Vertical Balance Hoppsving Toes-to-sky Jump turns Crud skiing / powder skiing Spiess Edge to Edge	**Line** Follow the leader Line in the snow Shadow Drill Draw a line	**Rotational Balance** Inside Ski Turns Spiess Power Plow Handcuff Tuck Turns Handle Bar No Poles
Coordination Vrenni's drill Norwegian pole plant Children's spiess Spiess Charleston Texas two-step Synchronized skiing Fall line skating Bumps Thousand steps Spaghetti legs Backwards skiing, Pierre's drill Linked 360's 360's in air	**Edging** Glenn's drill Inside ski turns Step-step arc Fall line skating Powerplow Jump turns Edge to Edge	**Pivoting (Steering)** Power plow Step-step-arc Spiess Children's spiess Rollerblade Glenn's drill Snow blades
Timing Norwegian Pole Plant Edge to Edge Spiess Fall Line Skating 360's in the Air	**Pressure** Tuck Turns GS Free Skiing Rollerblade	

Quick Reference Guide - Technical Free Skiing

Performance Level ... Train to Compete Stage

At this level of development, the goal of all exercise and drills should be focussed at the highest degree of proficiency. All tasks should be performed with all possible variations and degree of difficulty. All exercises and drills should be allocated sufficient time to train, however, the result of the tasks should be tested back into overall performance as soon as possible.

Stance/Balance Movements	**Lateral Balance**	**Fore-Aft Balance**
Thousand steps Hoppsving Step-step arc Vrenni's drill Hit-hit-hit Hands-all-over Fall line skating Rollerblade Spiess Hip lift Posture exercise Victory pose All terrain / all conditions	Vrenni's drill One Ski skiing Inside ski turns Hands-all-over Fall line skating Step-step arc Hoppsving All terrain / all conditions Edge to Edge	Hands-all-over Spiess Fall line skating Hoppsving One ski skiing Hip lift Victory pose Posture exercise No Poles Handle Bar Snow Blades
Vertical Balance	**Line**	**Coordination**
Hoppsving Jump turns Spiess Bumps Excessive movement All terrain / all conditions	Draw a line Shadow Drill Follow the Leader	Vrenni's drill Norwegian pole plant Spiess Fall line skating Thousand steps 360's in air Backwards skiing, Pierre's drill One ski skiing One ski skiing in drills Hit-hit-hit All terrain / All Conditions Edge to Edge Air time

Edging	**Pivoting (Steering)**	**Pressure**
Glenn's drill Inside ski turn Step-step arc Fall line skating Powerplow Jump turns Tuck turns Rollerblade Edge to Edge Side slip Hit-hit-hit Rollerblade Step-step arc Pole pinch Tuck turns Handcuff Fall line skating Powerplow	Glenn's drill Step-step arc Spiess Tuck turns Rollerblade Powerplow Banana turn	Edge to Edge Rollerblade Powerplow Tuck turns Banana turn
Timing	**Rotational Balance**	
Edge to Edge Norwegian Pole Plant Powder/Crud skiing Spiess Inside Ski Turns Banana Turns Norwegian Pole Plant Texas Two Step Step-Step Arc Synchronized Skiing Edge to Edge	Handcuff Tuck Turns Handle Bar No Poles Spiess Inside Ski Turns	

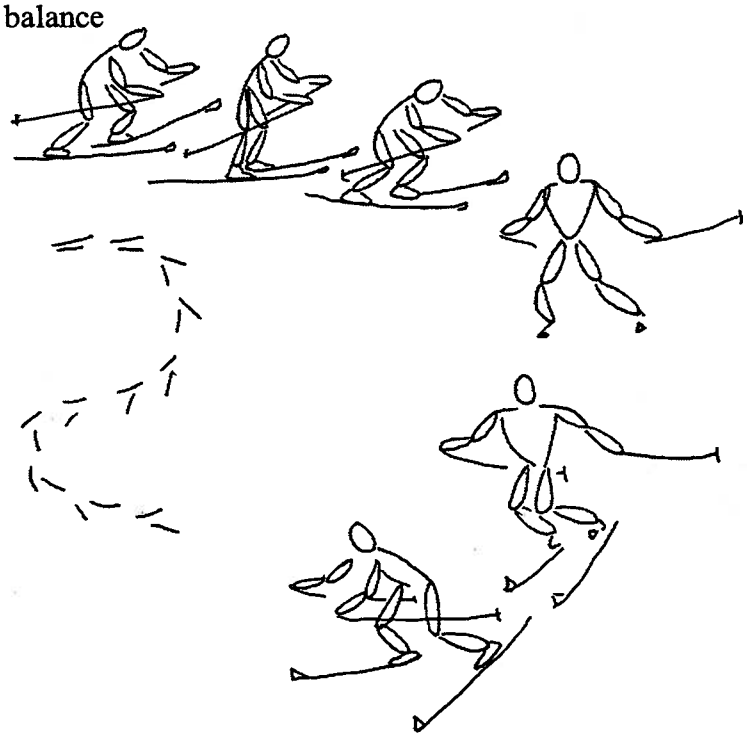
Thousand Steps

Description

Skier performs active lateral and forward steps off of an edged ski through the entire arc while maintaining balanced upper body position with shoulders and elbows ahead of the kneecaps.

Objectives

- Alignment of the skeleton
- Forward movement off of a working ski
- Active forward/backward and lateral balance



Terrain

Flat to moderate

Turn Shape

Open slalom to fully completed G.S.

Variations

Horizontal pole
Hands-all-over positions
Boots undone

Notes

Ensure skier completes arc
Ensure skier steps forward and up the hill (central nervous system stimulation).
Ensure skier disciplines upper body to eliminate rotation of shoulders
Ensure skier balances over outside ski

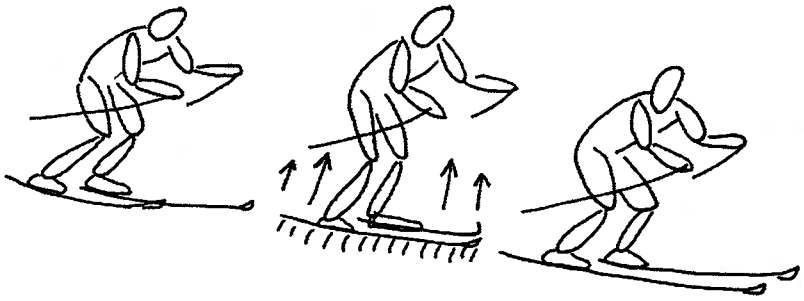
Hoppsving

Description

Skier performs small two-footed hops, off centre of skis, around entire arc of the turn, while maintaining strong upper body position. Spine should be slightly rounded. Skier should remain balanced to the outside ski even though hops are performed off of both skis.

Objectives

- Strong natural balanced alignment on skeleton
- Vertical balance

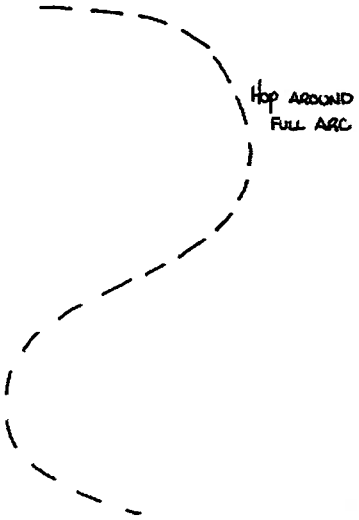


Terrain

Flat to moderate

Turn Shape

Open Slalom to tight G.S.



Variations

Horizontal pole
Uneven terrain
Terrain changes

Notes

Ensure skier jumps off balls of feet
Encourage skier to use this drill as part of warm up protocol.
Encourage skier to maintain balance and disciplined upper body.

Hands-all-over Basic

Description

This drill has several variations. Each variation challenges the skier to regain balance while performing fall line turns.

Objectives

- In all the following variations, alignment and stance is encouraged and promoted.

Terrain

All variations require flat to moderate terrain

Turn Shape

Slalom to moderate GS

Variations

Hands on hips
Cossack Position
Hands behind head
Hands above head

Notes

Encourage skiers to utilize this drill as part of their warm-up protocol.

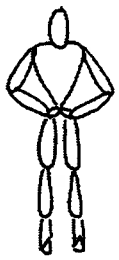
Hands-all-over Basic Variation

Description

Without poles, the skier places hands on hips, with fingertips firmly placed upon the hip flexors. Skier performs fall line turns attempting to place as little pressure as possible on fingertips, as this will be an indication of sitting back. Skiers should remain focussed on standing tall and using lower joints to turn ski.

Objectives

- Promotes upper-lower body separation
- Promotes lateral and forward/backward balance
- Promotes parallel leg movement
- Promotes lower body steering skills



Turn Shape

Slalom

Terrain

Flat to moderate

Notes:

Ensure skiers have no pressure on finger tips
Upper body and hips should remain square to fall line
Skis must be directed across hill to control speed

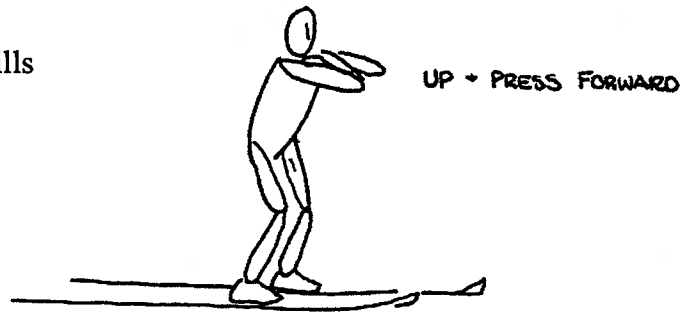
Hands-all-over Cossack Variation

Description

Without ski poles, the skier crosses arms over chest. The skier, with arms crossed, raises elbows up to shoulder height and presses them forward (as would a Russian dancer) while performing fall line turns.

Objectives

- Promotes disciplined upper body position
- Isolates core muscles
- Enhances forward/backward balance skills
- Promotes active lower legs
- Promotes upper/ lower body separation



Terrain

Flat to moderate

Turn Shape

Slalom

Notes

Ensure skier keeps elbows up and pressed forward at all times during exercise
Ensure the skier does not rotate into the turn with upper body. The feet and lower legs start the turn.

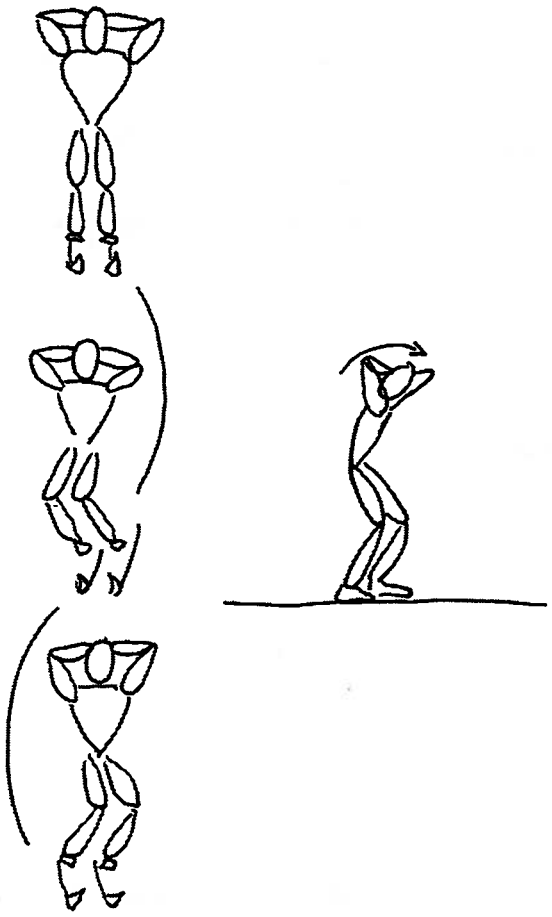
Hands-all-over Hands Behind Head Variation

Description

Skier intertwines fingers behind neck, and with a 1/2 crunchie move with core, performs fall line turns.

Objectives

- Promotes upper / lower body separation
- Enhances upper body position
- Promotes forward/backward balance



Terrain

Flat to moderate

Turn Shape

Slalom

Notes

Encourage skier to focus on lower body mobility.

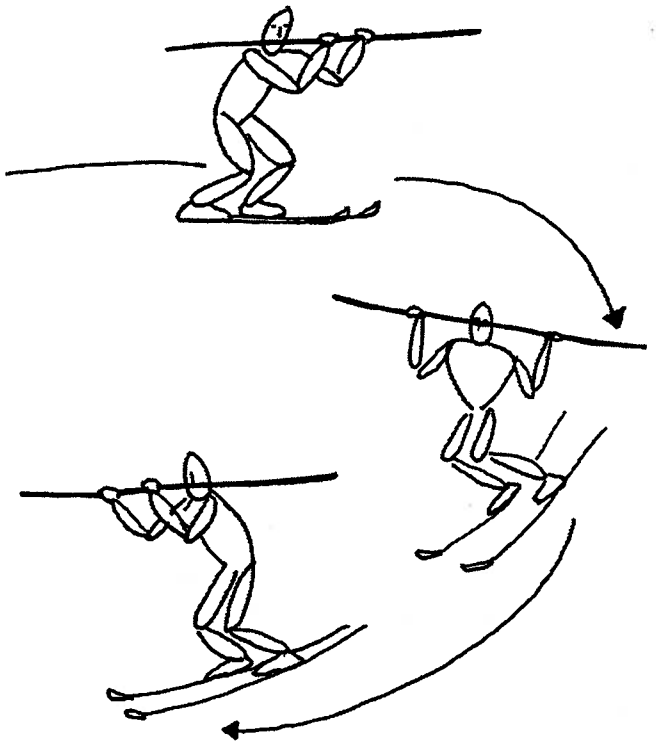
Horizontal Pole

Description

Holding a full length bamboo at eye level, with elbows outstretched, the skier performs turns with focus on keeping the pole level throughout the arc. The coach may request the skier to hold pole so that the inside of the pole is higher than the outside end.

Objectives

- Promotes a balance position over the outside ski
- Promotes excellent alignment throughout the turn



Terrain

Moderate to steep

Turn Shape

Slalom and GS

Notes

Ensure the skier keeps the pole level with the eyes.
Ensure that the skier keeps elbows extended and ahead.

Handle Bar (18 inch curved bar fitted with ski handles at each end)

Description

The skier holds the handle bar trying to maintain a forward hand and arm position at chest level.

Objectives

- Isolates the core muscles for upper/lower body separation
- Promotes consistent arm and hand position
- Emphasizes upper body discipline

Terrain

Flat to steep

Turn Shape

Slalom and GS

Variations

Terrain changes
Uneven terrain

Notes

Encourages skier to maintain rotational balance
Encourages skier to focus on upper body, arms and hands discipline

No Poles

Description

The skier maintains arms in front of the upper body with elbows in front of the core at chest level. Skier should endeavour to maintain hands at a consistent width.

Objectives

- Promotes disciplined arms and hands position
- Emphasizes upper body discipline
- Isolates the core muscles for upper/lower body separation
- Promotes movement and balance

Terrain

Flat to steep

Turn Shape

Slalom and Giant Slalom turns

Variations

Terrain changes
Uneven terrain
Giant Slalom Drill Courses

Notes

Encourages disciplined rotational balance
Encourages consistent arm and hand width
Encourages movement in the lower body only

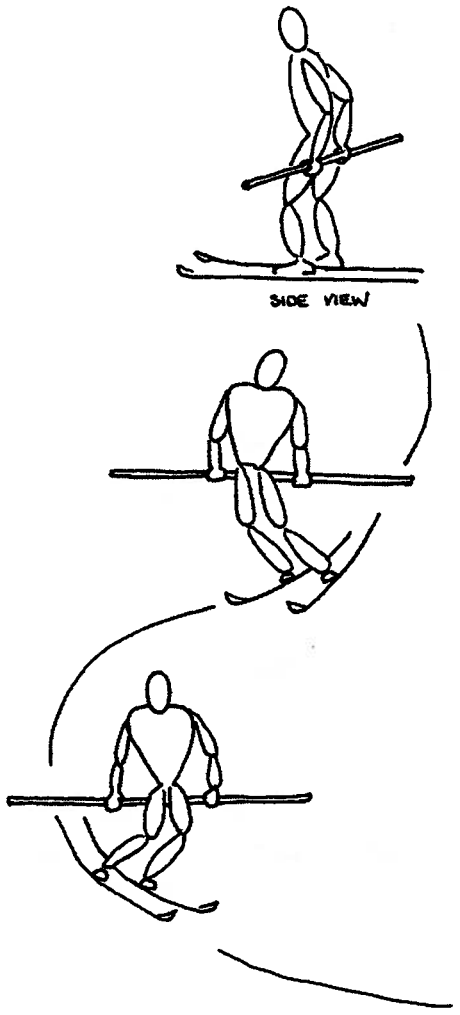
Hip Lift

Description

Skier removes ski poles from wrist, placing poles together, brings them behind back placing them just under the bum. The skier performs turns, poles are lifted and pulled forward on the bum to "lift" hips and place the skier's weight more upon the shins. Shoulders should remain ahead of the kneecaps.

Objectives

- Promotes alignment (stacking of joints)
- Enhances forward/backward balance
- Enhances vertical balance



Terrain

Flat to steep

Turn shape

Slalom to tight GS

Variations

Add hop in between turns

Notes

Encourage "tall" sensation … "lifting"

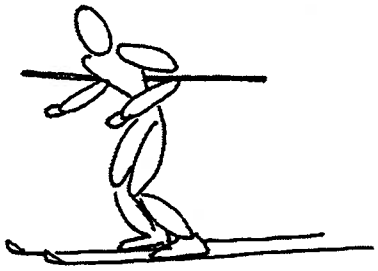
Posture Exercise

Description

Skier removes ski poles from wrists and takes poles together, placing them behind back. Skier hooks elbows around poles to bring shoulders back and chest up. Turns are performed with emphasis on tall upper body, and pressure on both shins

Objectives

- Promotes upper body discipline
- Promotes fore-aft balance
- Challenges alignment



Terrain

Flat to moderate

Turn Shape

Slalom

Variations

Add hop in between turns
Utilize with "draw a line" exercise
In shallow bumps
Over terrain changes

Notes

Do not use if skier has history of shoulder problems
Ensure weight is on balls of feet: should feel shin pressure

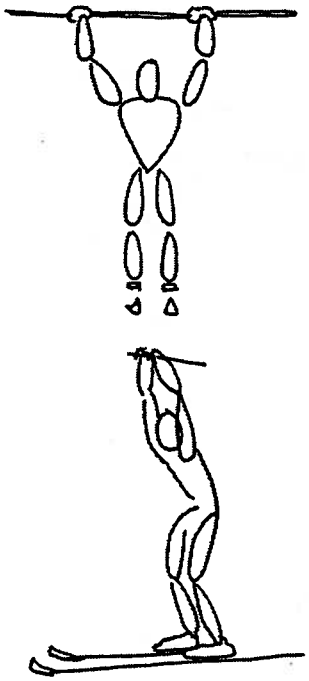
Victory Exercise

Description

Skier removes ski poles from wrists and holds them together as wide as possible (outside shoulder width). Bringing poles above head in a victory pose the skier performs turns. Emphasis upon reaching high above head, shin pressure, weight on balls of feet, and hip, knee and ankle alignment.

Objectives

- Promotes fore-aft balance
- Challenges alignment
- Enhances upper / lower body separation



Terrain

Flat to moderate

Turn Shape

Slalom

Variations

Lifting uphill hand higher than downhill hand to promote lateral pinch over outside ski

Notes

Ensure skier maintains shin pressure and balance

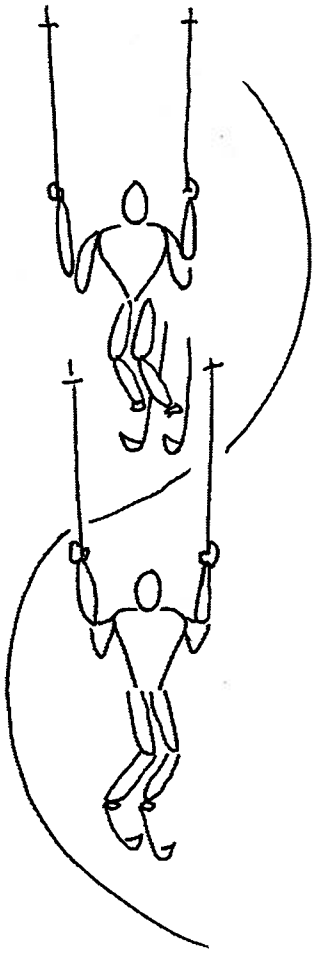
Goal Post (Window)

Description

Skier holds ski poles with baskets pointing to the sky. With arms wider than shoulder width, at shoulder height, the skier visually "frames" a specific point within the poles and skis down the fall line towards that point without allowing it to disappear from within the frame.

Objectives

- Develops upper / lower body separation



Terrain

Flat to steep

Turn Shape

Slalom

Variations

Vary width of stance, narrow to wide
Vary terrain.

Notes

Ensure that the skier keeps hands up to shoulder height
Encourage skier to maintain focus

Boots Undone

Description

With top buckles undone (power strap tight), the skier performs exercises, drills, or normal skiing.

Objectives

- Promotes natural alignment and feet sensitivity
- Challenges forward/backward and lateral balance
- Creates awareness of ankle articulation
- Creates awareness of skeletal/muscular coordination

Terrain

Flat to moderate

Turn Shape

Slalom or GS

Variations

Use as a variation with other exercises and drills

Notes

Safety is a priority with this drill, ensure snow conditions are groomed and firm
Ensure skier maintains a disciplined upper body.

Fall line Skating

Description

The skier skates, in a hockey-like fashion, straight down the fall line.

Objectives

- Promotes balance on an edged ski
- Enhances the movement from a working "loaded" ski
- Promotes moving body forward and down the fall line
- Enhances lateral balance

Terrain

Flat to moderate

Turn Shape

No turn shape

Variations

With horizontal pole
With hands-all-over positions

Notes

If skier has difficulty with this drill on flat terrain, check cuff alignment of boots
Watch for unnecessary movements of the upper body

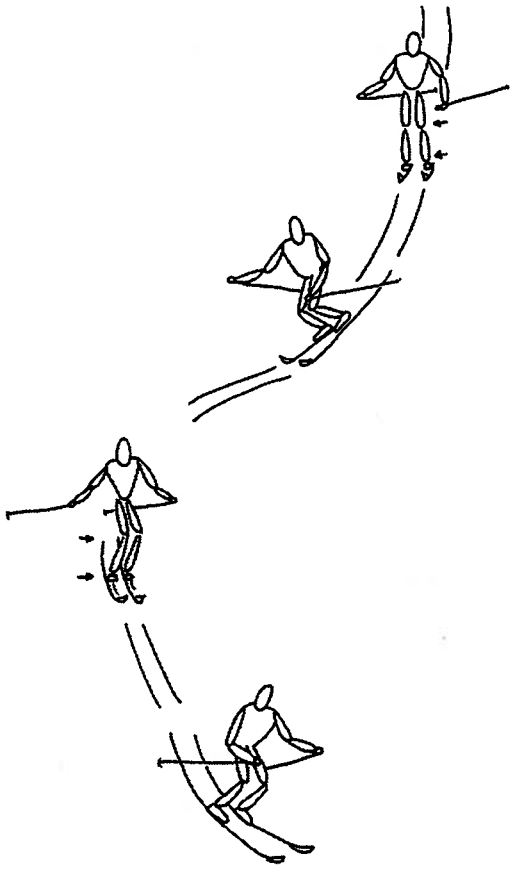
Rollerblade (Railway)

Description

With a natural width of stance edge both skis by rolling both ankles and knees forward and inside. (shin pressure.) Drill is executed patiently and with no sliding.

Objective

- Enhances parallel leg movement
- Promotes edging skills
- Promotes separation skills
- Enhances alignment
- Enhances lateral balance



Terrain

Flat to moderate

Turn Shape

GS, and open Slalom

Variation

Hands-all-over positions
With horizontal pole
Without ski poles

Notes

Encourage skier to leave clean tracks
Encourage skier to feel shin pressure during execution of the drill

Figure 8 Skating

Description

Skier performs large figure 8 design, on a variety of terrain, using skating and poling action of legs and arms. Skier should perform movements forward and balanced over the outside ski.

Technical Objectives

- Promotes coordination
- Enhances edging skills
- Promotes lateral balance
- Enhances movement off of a working ski

Terrain

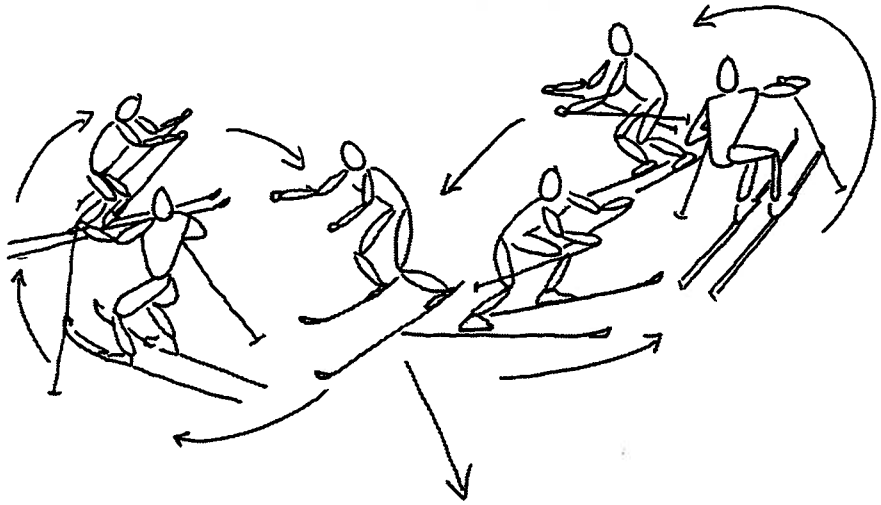
Flat to moderate

Turn Shape

Tight and open figure 8

Variations

With horizontal pole
With hands-all-over positions
Without poles
With overhead arms



Notes

Encourage skier to coordinate movement of the arms and the legs

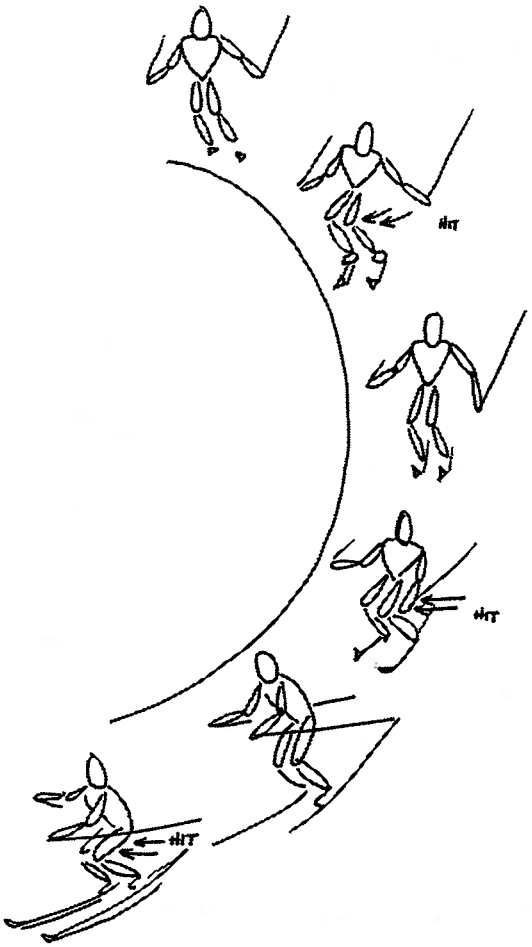
Hit-Hit-Hit

Description

At the top of the fall line, in the fall line, and at the completion of the turn, the performs a lateral "hit" to both skis using both knees/ankles, while maintaining excellent body position and balance. A pole touch may be added to each lateral hit.

Objectives

- Enhances alignment skills
- Promotes lower body lateral movement
- Promotes edging skills
- Enhances lateral balance
- Enhances forward/backward balance
- Promotes Nervous system stimulation



Terrain

Flat to moderate

Turn shape

Open slalom or tight GS

Variations

With horizontal pole
No poles
Hands all over positions
Add hop in between turns
Add pole touch to each lateral hit

Notes

Terrain is an important factor!
Encourage the skier to discipline upper body
Ensure that skier is making lateral hit with the knees and ankles using shin pressure NOT pushing hip into the hill

Step-Step-Arc

Description

Skier makes two forward and uphill steps across hill. As the second step is made the skier balances tall on the uphill ski and steers the ski into the fall line where he/she completes a full arc. At the end of the arc the skier again performs the two strongly balanced steps (forward and uphill) off of the downhill ski and repeats the exercise.

Objectives

- Promotes balance
- Enhances a tall position
- Promotes alignment
- Promotes vertical balance
- Enhances lateral balance
- Promotes pivoting (steering) skills
- Promotes movement off a working ski
- Promotes leg independence

Terrain

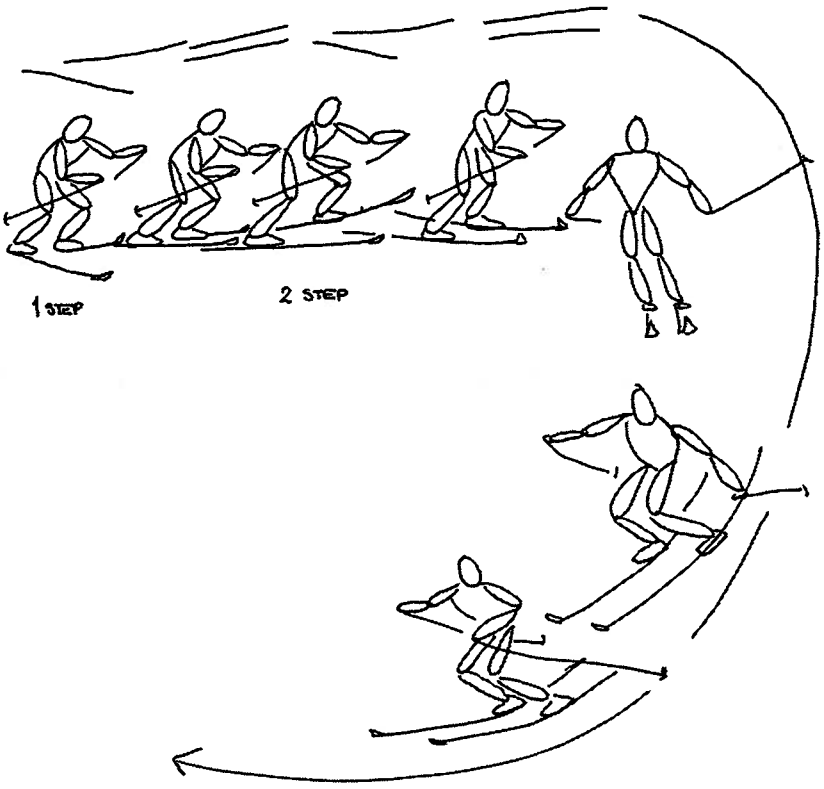
Flat to steep

Turn shape

Fully completed GS arc

Variations

With horizontal pole
With hands all over positions
With excessive slow speed



Notes

Ensure the skier completes the arc to control the speed

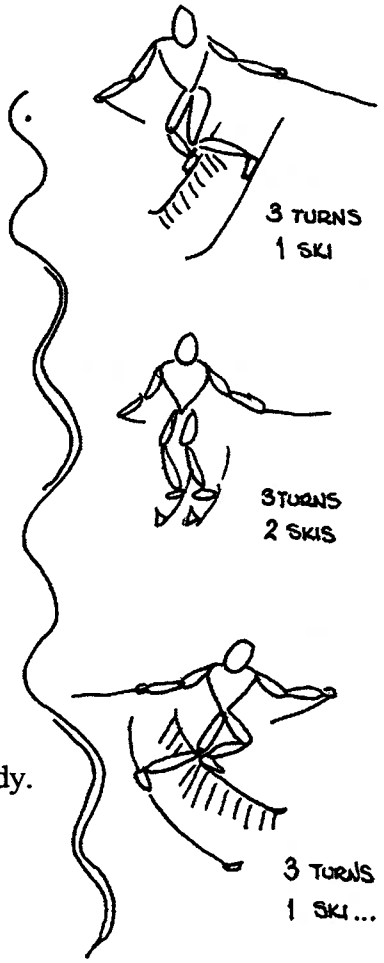
Vrenni's Drill

Description

On flat to moderate terrain, with speed, the skier lifts right ski off of the snow and performs three (3) slalom shaped arcs on the left ski, immediately the skier puts both skis on the snow and repeats the 3 arcs, then picks the left ski off the snow and performs 3 arcs with the right ski, etc.

Objectives

- Enhances pole plant skills
- Promotes lateral balance
- Promotes forward/backward balance
- Enhances coordination/ timing skills
- Enhances edging skills



Terrain

Flat to moderate

Turn Shape

Slalom

Notes

Challenge the skier to maintain balance and a disciplined upper body.

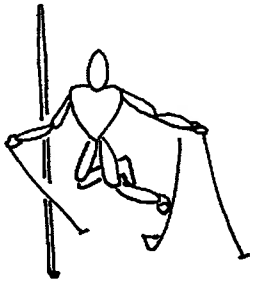
One Ski Skiing

Description

Skier performs a variety of turn shapes, at various speeds, in various conditions on one ski. Coach may choose to use the one-ski skiing as a variation to many other exercises and gate drills.

Objectives

- Promotes lateral, forward/backward, vertical balance
- Enhances alignment skills
- Enhances coordination
- Promotes edging skills
- Enhances pole plant skills
- Enhances upper / lower body separation



Terrain

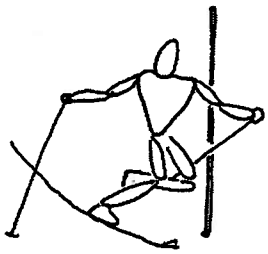
Flat to moderate

Turn Shape

Slalom and GS

Variations

In all terrain
In bumps
With excessive vertical movement



Notes

Ensure skier utilizes a pole plant for support and timing

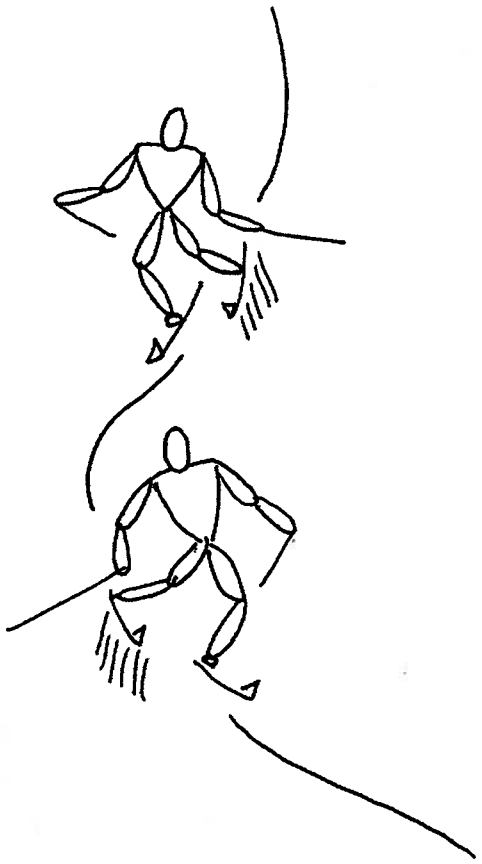
Inside Ski Turns

Description

Skier performs turns lifting the outside ski off the snow at the start of the turn: turn is performed on the inside ski.

Objectives

- Promotes pole planting skills
- Challenges coordination
- Enhances edging skills
- Promotes upper/ lower body separation



Terrain

Flat to moderate

Turn Shape

Open slalom, tight GS

Variations

Without poles
Charleston
With horizontal pole
With hands-all-over positions

Notes

Encourage skier to maintain balance.

Wide to Narrow to Wide

Description

Skier performs turns starting out with a very wide stance and gradually bringing the stance in as narrow as possible, then widens the stance until it feels natural and athletic.

Objectives

- Promotes lateral balance
- Enhances alignment
- Enhances coordination

Terrain

Moderate to steep

Turn Shape

Slalom and GS

Variations

With horizontal pole
With hands-all-over positions
No poles
Variety of speeds

Notes

Ensure skier exaggerates the stance
Ensure the skier disciplines his/her upper body

Too Far

Description

Skier performs turns rocking as far forward and as far back as possible. Slowly, the movement is less excessive until the skier finds balance through the skeleton with weight on the balls of the feet.

Objectives

- Promotes forward/backward balance
- Enhances alignment

Terrain

Flat

Turn shape

Slalom and GS

Variation

Loosened boots
In shallow bumps
With hands-all-over positions

Notes

Ensure the skier exaggerates the movement

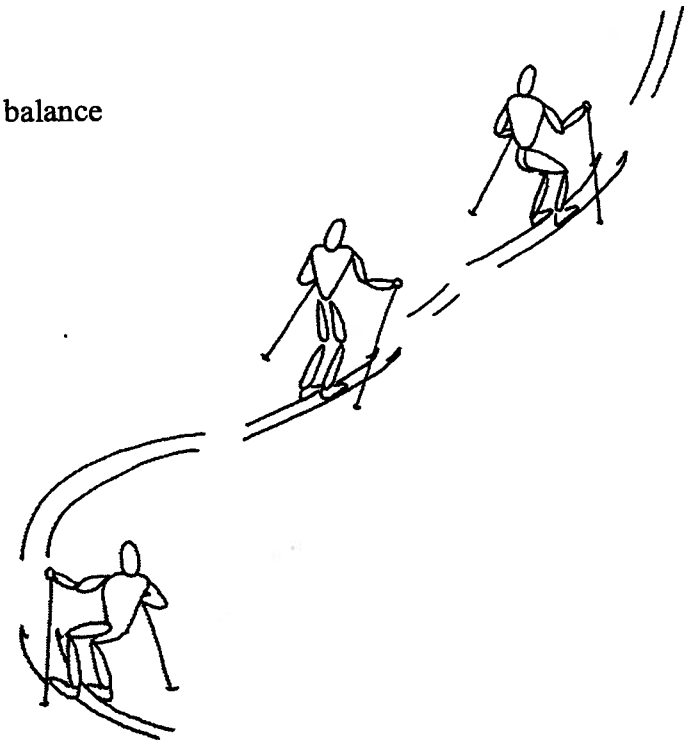
Backwards Skiing (Pierre's drill)

Description

Facing up the hill the skier performs linked, parallel turns.

Objectives

- Enhances forward/backward balance
- Enhances vertical balance
- Promotes coordination



Terrain

Flat to moderate

Turn shape

Open slalom to tight GS

Variation

Hands all over positions
Uneven terrain
Excessive up and down

Notes

Encourage the skier to maintain focus. Safety is a priority.

Linked 360's

Description

With adequate speed, on smooth / consistent conditions, the skier spins fully completed 360 degree circles by adjusting fore-aft forward/backward balance on the skis. The skier should alternate direction of spin every 3-4 360's.

Objectives

- Enhances forward/backward balance
- Develops coordination and spatial awareness

Terrain

Moderate

Variations

Without poles
Loosened boots

Notes

Encourage skier to perform 360's in both directions

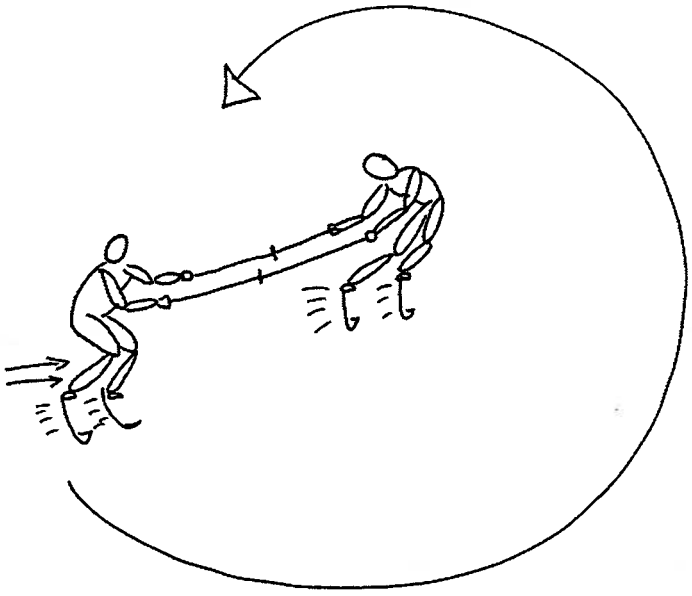
Spin Around

Description

This task requires two skiers. Ski poles are attached as follows: straps of one pole are wound about the basket of the other, creating a long pole with a link. Task will require two of these "long poles" per two skiers. In a safe environment, on consistent moderate - steep terrain, the skiers each hold an end of the long pole in each hand. One skier begins down the hill and as the "long pole" becomes taunt, sets the edge to pull the other skier in a circular fashion. The skiers together will begin creating a revolving 360 down the slope, using the edges to propel each other through the motion. Skiers should change directions after five or six revolutions.

Objectives

- Develops edging skills



Terrain

Open and consistent slope: moderate to steep

Notes

Safety is priority. Do not have skiers perform this task on crowded slopes or on narrow terrain!

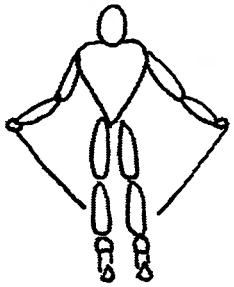
Hockey Stop

Description

From a stand still position, skier travels directly down the fall line. Once speed is established, skier turns both lower legs / skis perpendicular to the direction of travel and sets both edges strongly into the hill while keeping the upper body / hips facing down the fall line.

Objectives

- Promotes separation skills
- Promotes edging skills
- Enhances pole plant skills
- Enhances coordination
- Promotes rotational awareness

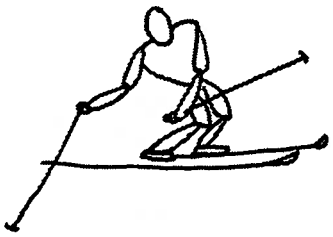


Terrain

Medium to steep

Variations

Without ski poles
With horizontal pole
With window drill



Notes

Ensure skier commits to a full stop and stays balanced out over the outside ski

Children's Spiess

Description

Without skis, skier performs small jumps turning the feet perpendicular to the line of travel. At the same time the upper body and hips are square to the fall line, stabilized by a pole plant.

Objectives

- Promotes turning of the lower leg
- Enhances upper / lower body separation
- Enhances pole plant
- Sequence into Spiess

Terrain

Flat to moderate

Notes

Ensure that skiers steers with the lower leg
Ensure that the upper body faces down hill
Ensure that the pole plant is properly placed and timing is accurate

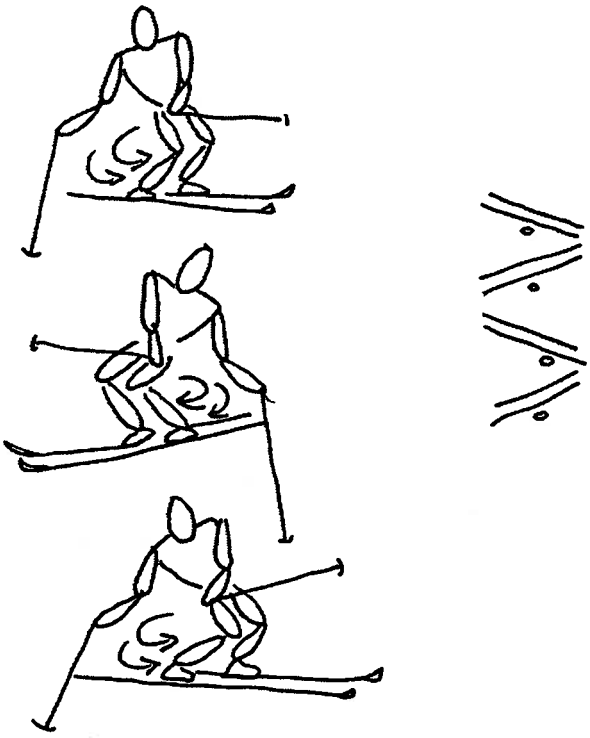
Spiess

Description

Skier performs small jump (with ankles) to turn the skis perpendicular to the line of travel while keeping hips, shoulders facing down the fall line. Upper body is stabilized with a pole plant.

Objectives

- Promotes turning of the lower leg
- Enhances pole plant skills
- Promotes upper / lower body separation
- Develops coordination



Terrain

Flat to moderate

Turn Shape

Skis must come perpendicular to line of travel

Variations

Sequence from Children's Spiess

Notes

Ensure skier is jumping with their ankles
Ensure that skier utilizes a pole plant
Coach should watch for boot malfunction.

Edge to Edge

Description

Skier performs a small jump (springing from the ankles) with skis in a slight wedge and lands on the inside edge of the outside ski. The skier repeats the movement to the other ski aided by a pole plant.

Objectives

- Promotes edging skills
- Promotes pole plant skills
- Develops timing-coordination skills
- Promotes upper/lower body separation

Terrain

Flat to moderate

Turn Shape

Skis are edged and pressured immediately upon landing

Variations

Children's edge to edge

Notes
Encourage a pole plant
Encourage disciplined upper body
Encourage skier to use their ankles

Toes to sky

Description

Skier starts the turn with both arms reaching high above the head. As turn progresses, and pressure builds on the ski, the skier comes down with arms to touch the outside of both boots at the end of the turn. The action is then repeated.

Objectives

- Enhances vertical movement and balance

Terrain

Flat to moderate

Turn Size

Open slalom and tight GS

Variations

Add a jump in between arcs

Notes

Exaggerate the movement.

Jump Turns

Description

Skier tries to bring both skis off the snow by rising from a flexed position at the end of the turn. Skier maintains quiet and balanced upper body position while the lower body does the work.

Objectives

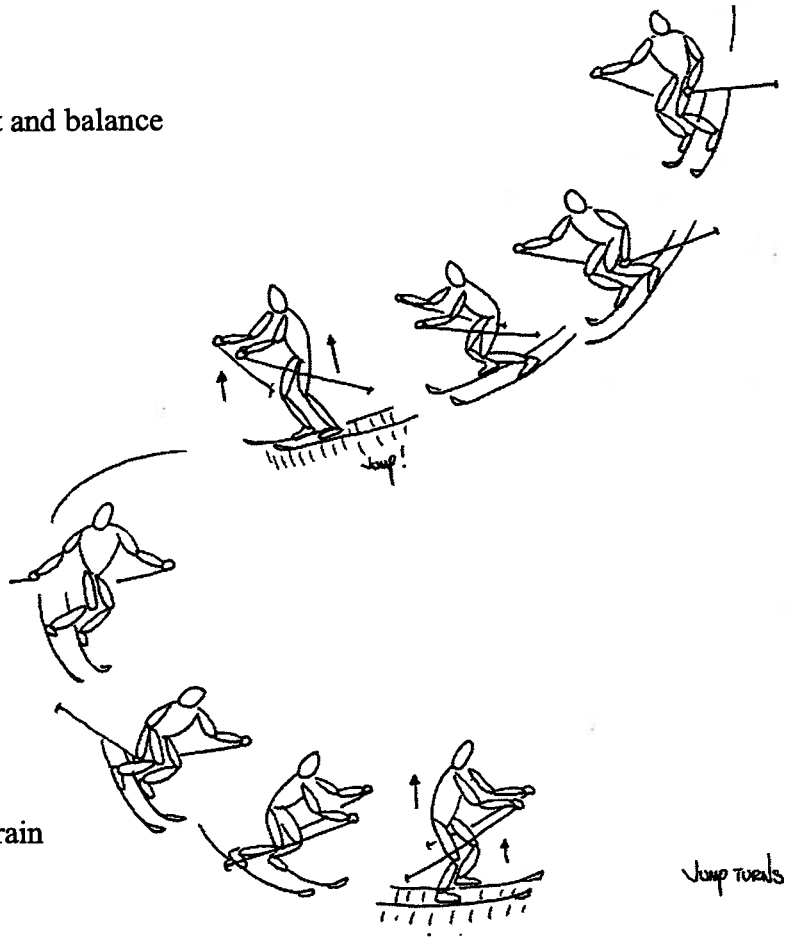
- Develops vertical movement and balance
- Enhances coordination

Terrain

Flat to moderate

Turn Shape

Slalom to GS



Variations

With horizontal pole
With Hands-all-over positions
In shallow bumps and changing terrain
Without poles

Notes

Ensure skier performs vertical movement with the legs rather than the upper body or legs
Encourage the skier to try to maintain rhythm in movements

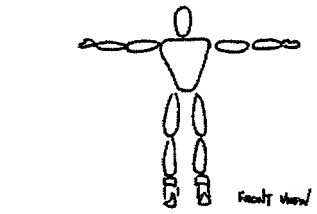
Airplane

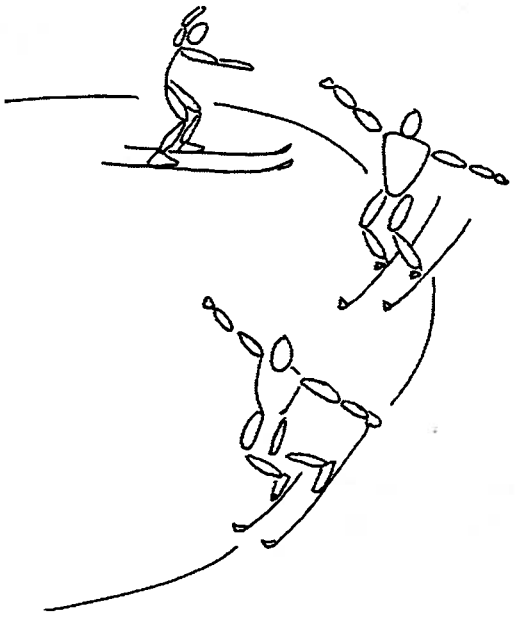
Description

Skier holds arms out at shoulder level and performs turns "flying" with the outside arm (wing) reaching down the hill over the outside ski. Inside arm (wing) is kept high to create a "pinching" sensation in the waist over the outside ski.

Objectives

- Promotes lateral movement balance
- Enhances edging skills
- Enhances pressure skills





Terrain

Flat to medium

Turn shape

Slalom to GS

Variations

See pole pinch exercise

Notes

Encourage skier to be aware of the pinching sensation in the waist

Norwegian Pole Plant

Description

In fall line turns, both poles are planted on the outside of turn, utilizing both arms, shoulders and hips facing down the fall line. Both poles should hit at the same time at a distance from the body that will help facilitate "pinch" over the outside ski.

Objectives

- Enhances timing/coordination
- Promotes upper / lower body separation
- Develops pole plant skills
- Enhances edging skills

Terrain

Moderate to steep

Turn Shape

Slalom

Variations

Add hop in between turns
One ski

Notes

Progress from Hockey stop drill
Ensure that skier reaches with both arms to set the pole plant down the hill

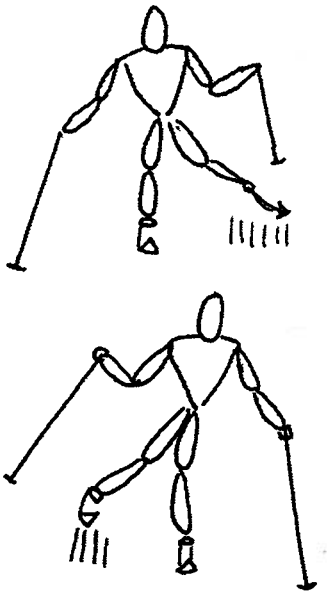
Charleston

Description

A variation of inside ski turns, the Charleston is a fall line version where the skier quickly hops from inside ski to inside ski in a dance fashion with quiet arms and quiet upper body.

Objectives

- Promotes timing skills
- Enhances coordination
- Enhances lateral balance
- Promotes alignment
- Promotes pivoting (steering) skills
- Promotes rhythm



Terrain

Flat to moderate

Turn Shape

Shallow Slalom

Variations

With horizontal pole
With hands-all-over positions

Notes

Encourage quick light action in switching inside feet
Encourage upper body discipline for balance

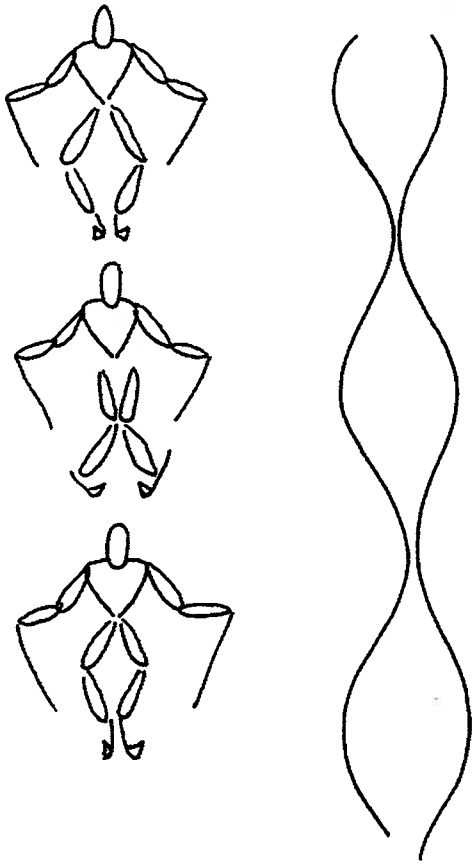
Spaghetti Legs

Description

Skier performs a continuous effort of bringing the knees together (knock kneed) and apart (bowlegged) to design a constant hourglass track in the snow.

Objectives

- Enhances lateral balance
- Promotes edging skills
- Develops coordination



Terrain

Flat

Variations

Across side hill

Notes

Allow skier to play with this exercise, encourage "clean" track (as little spray as possible)

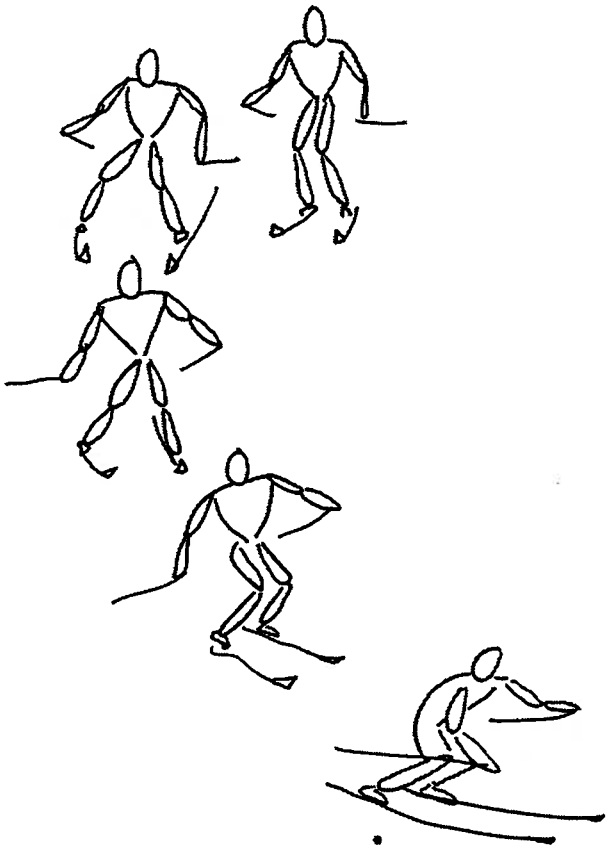
Glenn's Drill

Description

In linked, fully completed turns, the skier steps out uphill ski at the top of the turn in an edged plow position. Skier sets edge, balances to the edge in a tall balanced position, patiently moves body outside over the ski and drives both skis through the fall line and completes turn. Coming tall after completion, skier repeats movement. Speed in controlled and slow

Objectives

- Develops pivoting (steering) of lower legs
- Promotes vertical balance through turn
- Enhances edging skills



Terrain

Flat to moderate

Turn Shape

Fully completed GS

Variations

With horizontal pole
With "pole pinch"
Without poles

Notes

Ensure skier is balanced

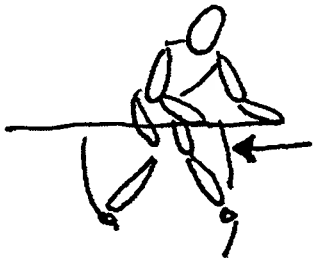
Power Plow

Description

In a plow position, the skier alternates balancing against fully edged ski to perform fall line - fully completed size arcs. Shoulders, hips remain down fall line, arms are forward and balanced with the pole plant.

Objectives

- Promotes pivoting (steering) with the lower leg
- Enhances edging skills
- Enhances upper/lower body separation skills



Terrain

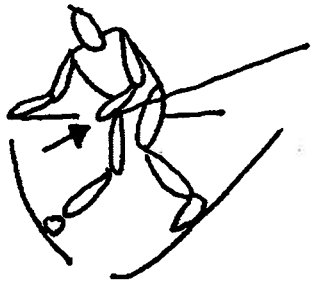
Flat to medium

Turn Shape

Slalom

Variations

Without ski poles
With horizontal pole
With hands-all-over positions



Notes

Ensure skier is "pinching" over outside foot by bending laterally in the waist
Encourage disciplined upper body and pole plant

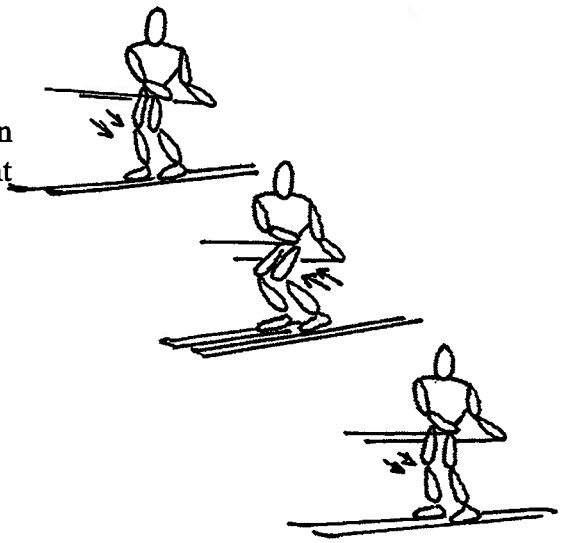
Slip
Side Slip

Description

Skier steers both skis across the fall line, with the upper body facing down the hill. Arms are held forward, crossing body to face down the hill also. Skier executes the task by releasing and setting the edges of the skis by rolling the ankles and knees into the hill (set) and down the hill (release). Edges are set with these smaller joints NOT the hips.

Objectives

- Promotes edging skills
- Enhances balance and alignment
- Promotes upper / lower body separation
- Promotes lateral ankles/knee movement



Terrain

Fall line moderate to steep

Variations

Diagonal side slip
Within gates
Without poles
With pole plant (plant is set when edges are set)

Notes

Ensure that the skier is utilizing ankles and knees to set the edges NOT hip!
Ensure skier keeps hands and arms balanced in front and down the hill.

Pole Pinch

Description

Skier places a full length bamboo pole behind the neck and rests arms and hands, shoulder width, over the pole. As the skier executes the drill he/she should feel a pinching sensation in the waist over the outside ski.

Objectives

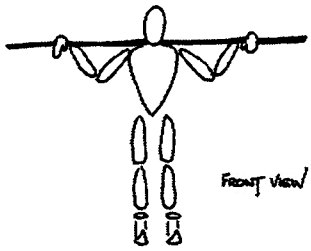
- Promote edging skills
- Enhances strong aligned position over outside ski

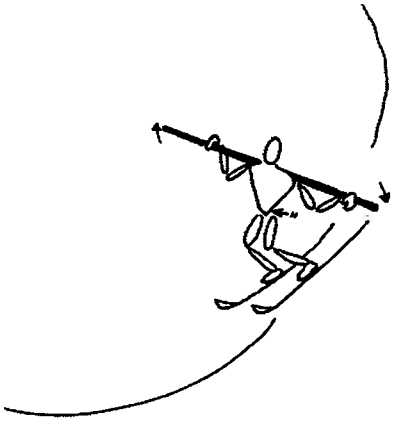
Terrain

Moderate

Turn Shape

GS





Variation

Add vertical hop in between arcs

Notes

Encourage skiers to make natural movement for balance.

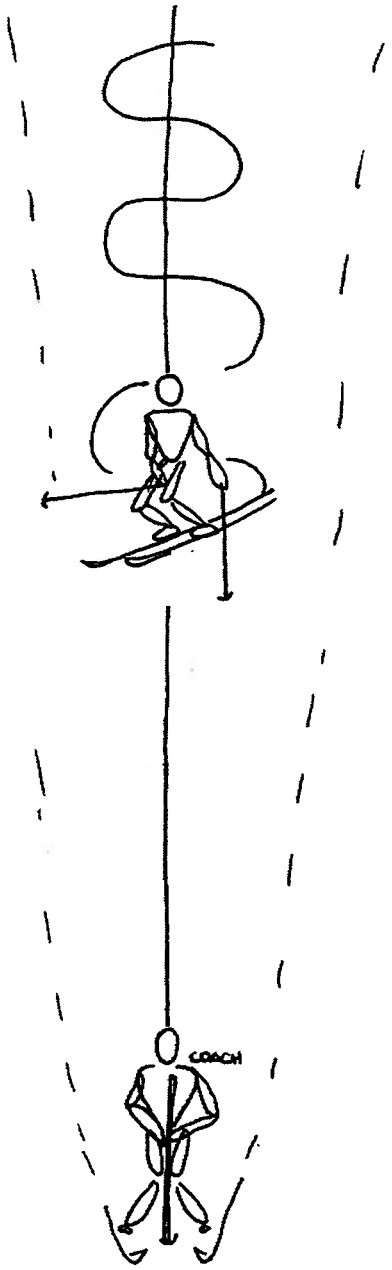
Draw a Line

Description

Coach, with a bamboo pole or ski poles, snow plows down fall line dragging the pole in between the legs. A line inside of a corridor is drawn in the snow. Skiers perform turns using the line as a focus point for the upper body/ hips, and as an indication how the skis are coming across the fall line.

Objectives

- Enhances upper/ lower body separation
- Promotes pole plant skills
- Enhances pivoting (steering) of the lower leg
- Improves looking ahead skills
- Promotes rhythm and linking



Terrain

Moderate

Turn Shape

Slalom, GS, back to the fall line.

Variations

With horizontal pole
With hands-all-over positions
With overhead pole
Without poles
With one ski
With snow blades

Notes

Encourage a pole plant
Encourage skier to set and maintain rhythm

Tuck Turns

Description

Skier performs long arc turns in a tuck position. Body should be in position that does not interfere with the movement of the legs

Objectives

- Promotes parallel leg action
- Promotes edging skills
- Promotes rotational balance awareness

Terrain

Flat to moderate

Turn Shape

GS and Super-G

Variations

Without poles

Notes

Encourage the skier to use shin pressure to direct skis

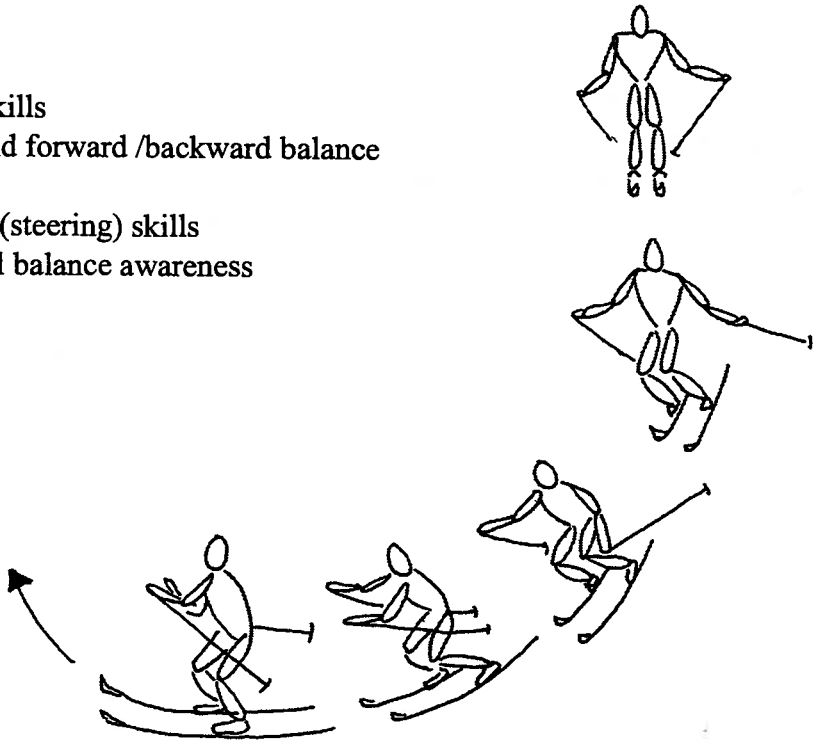
Banana Turn (Highest Mark)

Description

From a stop, the skier runs down the fall line and edges both skis. The skier then progressively edges the skis thereby creating one clean arc that continues up the hill until he/she is stopped.

Objectives

- Promotes edging skills
- Promotes lateral and forward /backward balance
- Enhances pressure
- Enhances pivoting (steering) skills
- Promotes rotational balance awareness



Terrain

Moderate to steep

Turn Shape

Fully completed GS

Variations

"Highest Mark" as a competition with skiers: who can leave the cleanest/ highest track
Without ski poles
With one ski
With hands-all-over-positions

Notes

Encourage strong balanced upper body position
Ensure that the skier stays with the arc until it is completed

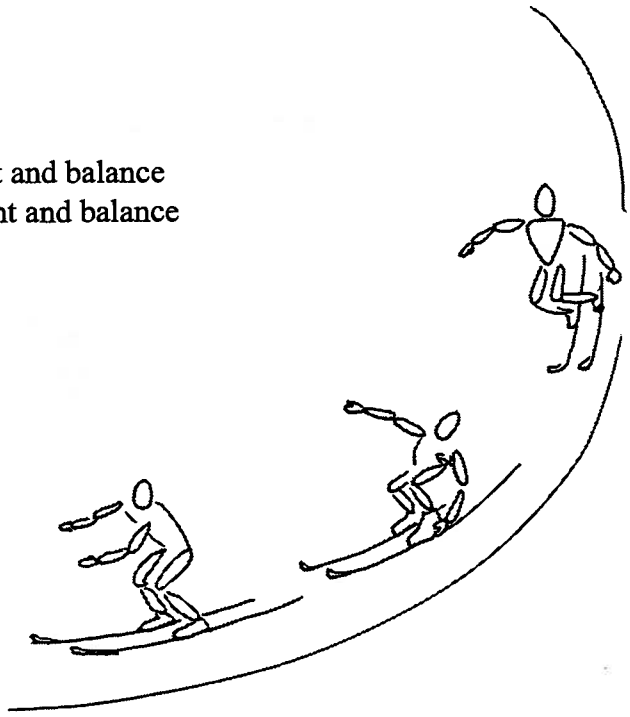
Outside Boot Touch

Description

Without ski poles the skier performs turns by reaching over with outside hand and touching the downhill (outside) ski boot. This task should be performed with a lateral pinch in the waist. Skier should return to a fully extended position between turns.

Objectives

- Develops rhythm
- Develops edging skills
- Enhances lateral movement and balance
- Promotes vertical movement and balance
- Promotes separation



Terrain

Flat to moderate

Turn shape

Open slalom to tight GS

Variations

Have skier fully extend with both hands reaching above head in between turns
Have skiers use both hands to touch boots.

Notes

Ensure that skier bends laterally in all lower body joints.

Outside Ski Only

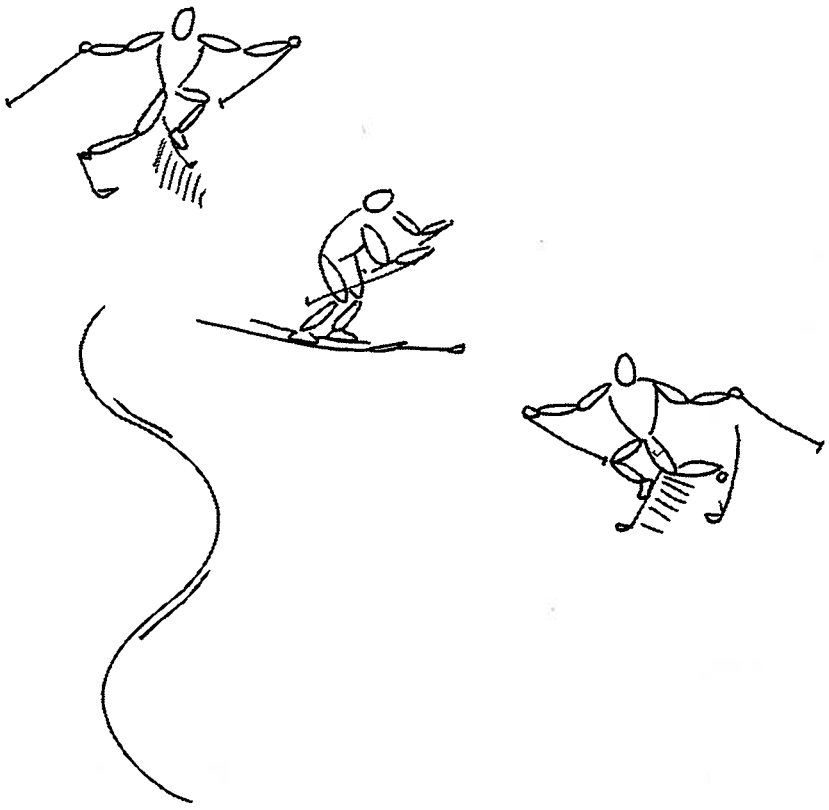
Description

Skier performs task by lifting the inside ski off of the snow at the initiation of the turn through to the completion of the turn; performing the entire turn balanced on the outside ski.

Objectives

- Develops edging skills
- Promotes lateral balance
- Enhances alignment
- Promotes coordination

and timing skills



Terrain

Flat to steep

Turn Shape

GS

Variations

Without ski poles
With horizontal bamboo pole
With overhead pole
In varied terrain and conditions

Notes

Ensure the skier keeps the inside ski completely off the snow throughout the entire turn

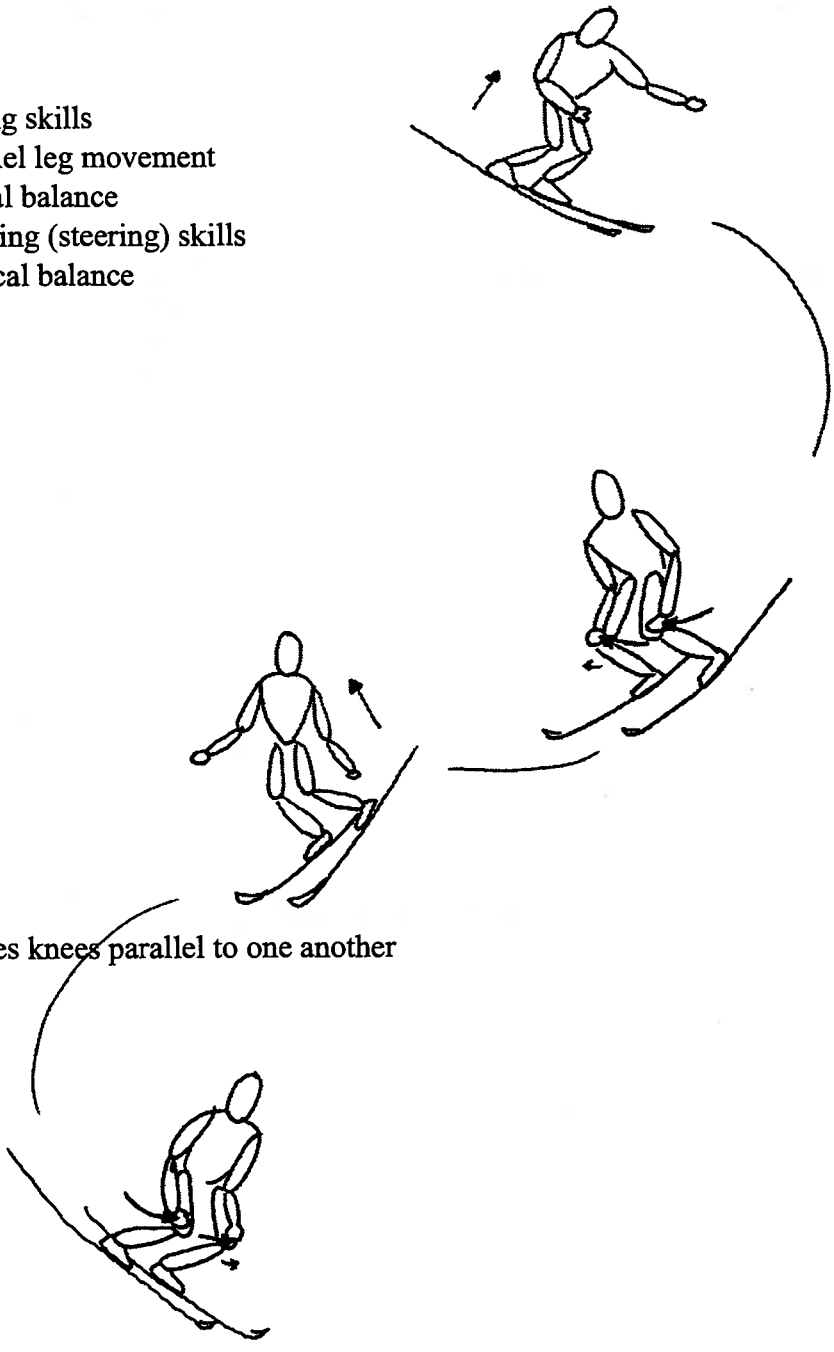
Roller Knees (Hands on Knees)

Description

Without ski poles, skier performs turns by placing hands on the downhill side of both knees and guiding knees laterally into the hill. As turn is completed, the skier extends in the legs, and places hands on the downhill side of both knees into the new turn.

Objectives

- Develops edging skills
- Promotes parallel leg movement
- Enhances lateral balance
- Enhances pivoting (steering) skills
- Enhances vertical balance



Terrain

Flat to moderate

Turn shape

Slalom to GS

Variations

Vary turn shape

Notes

Ensure that skier moves knees parallel to one another

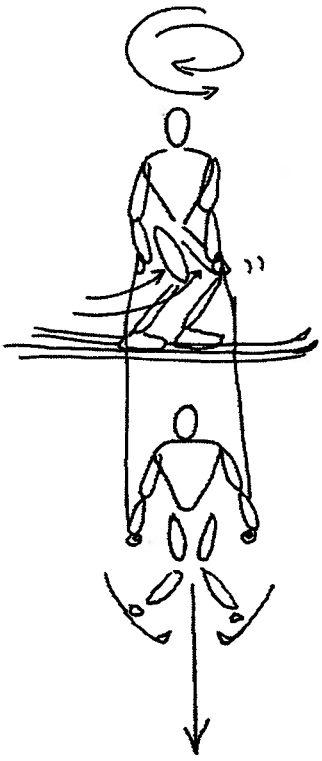
Two on a Bamboo

Description

This task requires two skiers and two very long bamboo poles. Skiers, without ski poles, grab the ends of the bamboo poles. Both skiers face down hill, one in front of the other. The first skier begins to straight run down the fall line, the second skier controls the speed for both by performing heavy "hockey stops" like edge sets. These edge sets are linked with a fully extended position.

Objectives

- Develops edging skills
- Promotes upper / lower separation
- Enhance lateral balance
- Promotes pivoting (steering) skills



Terrain

Moderate

Turn Shape

Slalom

Notes

Encourage steering with lower body and upper body discipline

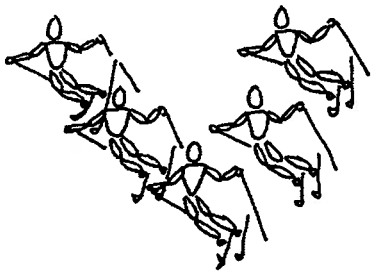
Synchronized Skiing

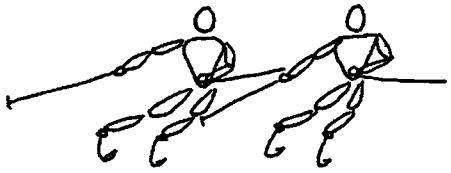
Description

In pairs, or more, skiers perform turns in various formations as one.

Objectives

- Develops coordination / timing
- Enhances looking ahead skills
- Promotes rhythm
- Promotes focus shifting (internal – external)





Terrain

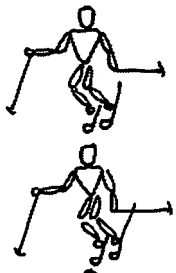
Flat to moderate

Turn shape

Slalom to GS

Variations

Side by side
V- formation
Behind one another
Square
Diamond



Notes

Safety protocol

Chase

Description

Pair skiers up and have them play chase. Emphasis is on figure-8 movements, skating, quick turns, etc. Focus is NOT straight running down the hill!

Objectives

- Promotes versatility training
- Enhances looking ahead skills

Terrain

Flat

Variations

Without poles
On Snow Blades
On one ski
Varied terrain / conditions

Notes

Ensure that skiers are clear on objective of game
Choose a safe slope that is not crowded, and provides width for task

Thousand Turns

Description

Coach skis down and chooses a location to stand. Skiers compete with one another to see who can perform the most turns to the coach.

Objective

- Promotes looking ahead skills
- Enhances timing skills
- Enhances focusing skills
- Enhances pivoting (steering) skills

Terrain

Moderate to steep

Turn Shape

Designated by coach

Variations

One ski
Designate number of turns
Inside ski only

Notes

Choose slope with adequate width.
Encourage skiers to execute model turns (sloppy turns do not count)
Encourage focus/concentration skills from start to finish

Bump Skiing

Description

Skiers perform Slalom or GS turns in bump terrain.

Objectives

- Promotes all skills

Terrain

Shallow to steep bumps

Turn shape

Slalom to GS

Variations

Without ski poles

Notes

Encourage bump skiing: relate to ruts and rough courses!

All Conditions

Description

Challenge skier to ski heavy snow conditions, wind blown crust, powder, ice, chop, as many variations in conditions as possible. Safety should always remain as a priority.

Objectives

- Enhances all skills
- Challenge

Terrain

All

Turn Shape

Slalom to GS (elite)

Variations

Without ski poles

Notes

Emphasise fun and variety

All Terrain

Description

Challenge skiers to ski all terrain: steep, flat, side hill, bumps, jumps, half-pipe, terrain garden, drop offs, etc.

Objectives

- Promotes all skills
- Challenge

Terrain

ALL!

Turn Shape

All

Variations

As skiers develop and progress challenge all exercises by changing the terrain!

Notes

Ensure that all terrain/ all conditions are a large part of your development program.
Safety is priority.

Follow the leader

Description

Skier follows coach or each other in an attempt to pattern the leaders line, speed and turn shape.

Objectives

- Promotes coordination.
- Enhances looking ahead skills
- Promotes versatility skiing

Terrain

Flat to moderate

Turn Shape

Slalom and GS

Variations

One on one. In group, maximum of five.

Notes

Safety is priority.
Change the leader.

Shadow Drill

Description

Use environmental aids to compel the skier to adjust line and turn shape.

Objectives

- Enhances adaptation skills.
- Promotes looking ahead.
- Promotes line interpretation.

Terrain

All

Turn Shape

Slalom and GS

Variations

According to your creativity.

Notes

Promotes decision making.
Speed control

Snow Blade Drill

Description

Use shortie shape skis to promote versatility training.

Objectives

- Enhances adaptation skills.
- Promotes forward/backward balance skills

Terrain

All

Turn Shape

Slalom and GS

Variations

Vary the length of the skis from snow blades to 160 cm.

Notes

Safety, watch speed.

Gate Skiing

Drills and Exercises

Quick Reference Guide - Gate Skiing

Entry Level .. FUN-damental Stage

In general, all exercises and drills listed are to be taught in the most likely successful environment: smooth terrain, flat to moderate (unless otherwise indicated). Participants should be allowed many attempts, and appropriate time on each exercise to develop proficiency (but not boredom!). All drills and exercises can be simplified for the entry level by keeping the environment in their favour: positive, simple, and with clear basic objectives!

Stance/Balance & Movement Turn Shape Course Vertical Balance Obstacle Warm-up Course Sideslip Drill Agility Training Drill Fore-Aft Balance Drill Turn Shape Course Modified GS Course Sideslip Drill Straight Fall Line Drill Agility Training Drill	**Lateral Balance** Obstacle Warm-up Course Sideslip Drill Agility Training Drill	**Forward/backward Balance** Fore-Aft Balance Drill Turn Shape Course Obstacle Warm-up Course Modified GS Course Sideslip Drill Straight Fall Line Drill Agility Training Drill
Vertical Balance Vertical Balance Training Course Agility Training Drill Obstacle Warm-up Course	**Line** Turn Shape Course Obstacle Warm-up Course Modified GS Course Agility Training Drill	**Edging** Turn Shape Course Vertical Balance training Course Obstacle Warm-up Course Modified GS Course Sideslip Drill Straight Fall Line Drill Agility Training Drill
Coordination Turn Shape Course Vertical Balance training Course Obstacle Warm-up Course Modified GS Course Sideslip Drill Straight Fall Line Drill Agility Training Drill	**Steering** Turn Shape Course Obstacle Warm-up Course Modified GS Course Straight Fall Line Drill Agility Training Drill	**Pressure** Turn Shape Course Vertical Balance training Course Modified GS Course Straight Fall Line Drill Agility Training Drill Sideslip Drill
Tactics Turn Shape Course Obstacle Warm-up Course Modified GS Course Straight Fall Line Drill Agility Training Drill		

Quick Reference Guide - Gate Skiing

Development Level .. Train to Train Stage

Exercises and drills should fill a large percentage of on-snow time for this level of skier. As with the entry level, the environment should facilitate success. All exercises and drills should be trained with a high level of proficiency, and sufficient time should be allocated for this proficiency to develop. Once the participant has reached a high level of success in an exercise or drill, the difficulty of the task can be increased by manipulation of the terrain.

Stance/Balance	**Lateral Balance**	**Forward/backward Balance**
Warm-up Course GS	Lateral Balance Drill GS	Fore-Aft Balance Drill GS
GS Line Drill	GS Line Drill	Warm-up Course GS
Three & Three SL	Three & Three SL	GS Line Drill
Phase Two Drill GS & SL	Phase Two Drill GS & SL	Three & Three SL
Corridor Sets GS & SL	Corridor Sets GS & SL	Phase Two Drill GS & SL
Fore-Aft Balance Drill GS	Super G Training	Corridor Sets GS & SL
Lateral Balance Drill GS	Defined Corridors SL	Defined Corridors SL
Super G Training	Warm-up Course SL	Warm-up Course SL
Defined Corridors SL	GS into SL Drill	GS into SL Drill
Warm-up Course SL	Hairpin Drill	Hairpin Drill
Vertical Movement GS		
GS into SL Drill		
Handle bar Drill		
Hairpin Drill		
Vertical balance	**Line**	**Edging**
Vertical Movement GS	GS Line Drill	Warm-up Course GS
Warm-up Course GS	Warm-up Course GS	GS Line Drill
GS Line Drill	Super G Training	Three & Three SL
Three & Three SL	Phase Two Drill	Phase Two Drill GS & SL
Phase Two Drill GS & SL	Corridor Sets	Corridor Sets GS & SL
Corridor Sets GS & SL		Fore-Aft Balance Drill GS
Defined Corridors SL		Lateral Balance Drill GS
Warm-up Course SL		Super G Training
GS into SL Drill		Defined Corridors SL
Hairpin Drill		Warm-up Course SL
		Vertical Movement GS
		GS into SL Drill
		Handle bar Drill
		Hairpin Drill

Coordination	**Steering**	**Pressure**
Warm-up Course GS	Warm-up Course GS	Warm-up Course GS
GS Line Drill	Warm-up Course SL	GS Line Drill
Three & Three SL		Three & Three SL
Phase Two Drill GS & SL		Phase Two Drill GS & SL
Corridor Sets GS & SL		Corridor Sets GS & SL
Fore-Aft Balance Drill GS		Fore-Aft Balance Drill GS
Lateral Balance Drill GS		Lateral Balance Drill GS
Super G Training		Super G Training
Defined Corridors SL		Defined Corridors SL
Warm-up Course SL		Warm-up Course SL
Vertical Movement GS		Vertical Movement GS
GS into SL Drill		GS into SL Drill
Handle bar Drill		Handle bar Drill
Hairpin Drill		Hairpin Drill

Edging (continued)	**Tactics**	
Warm-up Course GS	Warm-up Course GS	
GS Line Drill	GS Line Drill	
Three & Three SL	Super G Training	
Phase Two Drill GS & SL	Three & Three SL	
Corridor Sets GS & SL	Phase Two Drill GS & SL	
Fore-Aft Balance Drill GS	GS into SL Drill	
Lateral Balance Drill GS	Hairpin Drill	
Super G Training		
Defined Corridors SL		
Warm-up Course SL		
Vertical Movement GS		
GS into SL Drill		
Handle bar Drill		
Hairpin Drill		

Quick Reference Guide - Gate Skiing

Performance Level - Train to Compete

At this level of development, the goal of all exercises and drills should be focussed at the highest degree of proficiency. All tasks should be performed with all possible variations and degree of difficulty. All exercises and drills should be allocated sufficient time to train, however, the result of the tasks should be tested back into overall performance as soon as possible.

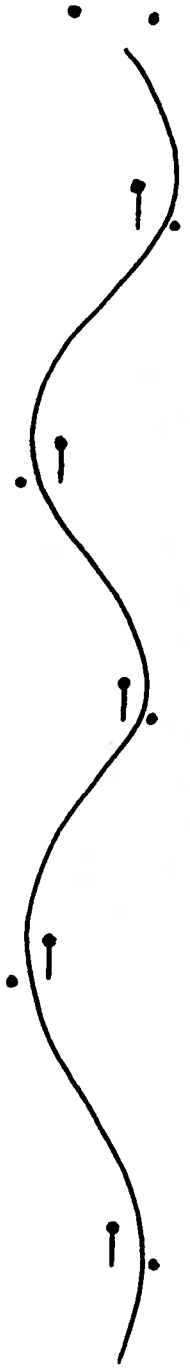
Stance/Balance Warm-up Course GS GS Line Drill Three & Three SL Phase Two Drill GS & SL Corridor Sets GS & SL Fore-Aft Balance Drill GS Lateral Balance Drill GS Super G Training Defined Corridors SL Warm-up Course SL Vertical Movement GS GS into SL Drill Handle bar Drill Hairpin Drill	**Lateral Balance** Lateral Balance Drill GS GS Line Drill Three & Three SL Phase Two Drill GS & SL Corridor Sets GS & SL Super G Training Defined Corridors SL Warm-up Course SL GS into SL Drill Hairpin Drill	**Forward/backward Balance** Fore-Aft Balance Drill GS Warm-up Course GS GS Line Drill Three & Three SL Phase Two Drill GS & SL Corridor Sets GS & SL Defined Corridors SL Warm-up Course SL GS into SL Drill Hairpin Drill
Vertical balance Vertical Movement GS Warm-up Course GS GS Line Drill Three & Three SL Phase Two Drill GS & SL Corridor Sets GS & SL Defined Corridors SL Warm-up Course SL GS into SL Drill Hairpin Drill	**Line** GS Line Drill Warm-up Course GS Super G Training Phase Two Drill Corridor Sets	**Edging** Warm-up Course GS GS Line Drill Three & Three SL Phase Two Drill GS & SL Corridor Sets GS & SL Fore-Aft Balance Drill GS Lateral Balance Drill GS Super G Training Defined Corridors SL Warm-up Course SL Vertical Movement GS GS into SL Drill Handle bar Drill Hairpin Dri

Coordination	**Steering**	**Pressure**
Warm-up Course GS	Warm-up Course GS	Warm-up Course GS
GS Line Drill	Warm-up Course SL	GS Line Drill
Three & Three SL	GS into SL Drill	Three & Three SL
Phase Two Drill GS & SL		Phase Two Drill GS & SL
Corridor Sets GS & SL		Corridor Sets GS & SL
Fore-Aft Balance Drill GS		Fore-Aft Balance Drill GS
Lateral Balance Drill GS		Lateral Balance Drill GS
Super G Training		Super G Training
Defined Corridors SL		Defined Corridors SL
Warm-up Course SL		Warm-up Course SL
Vertical Movement GS		Vertical Movement GS
GS into SL Drill		GS into SL Drill
Handle bar Drill		Handle bar Drill
Hairpin Drill		Hairpin Drill
Edging (continued)	**Tactics**	
Warm-up Course GS	Warm-up Course GS	
GS Line Drill	GS Line Drill	
Three & Three SL	Super G Training	
Phase Two Drill GS & SL	Three & Three SL	
Corridor Sets GS & SL	Phase Two Drill GS & SL	
Fore-Aft Balance Drill GS	GS into SL Drill	
Lateral Balance Drill GS	Hairpin Drill	
Super G Training		
Defined Corridors SL		
Warm-up Course SL		
Vertical Movement GS		
GS into SL Drill		
Handle bar Drill		
Hairpin Drill		

Turn Shape Course Fun-damental

Description

This drill is to introduce the turn shapes for entry level skills. 10-12 stubbies or foam markers will be sufficient introduction.



Objectives

- Promotes the turn shape required for gate training
- Promotes patterning of turn shape
- Promotes looking ahead
- Promotes a safe non intrusive environment

Terrain

Flat to Medium groomed terrain

Variations

Stay with stubbies, set ¼ turns, ½ turns.

Turn Shape

¼, ½.

Notes

Encourage the skier to ski as naturally as possible.
Set short training courses, 10 – 15 gates maximum.
Bamboo or flex trainers can be used after the shape has been established.

Description

This drill is to encourage vertical movement. The goal of setting is to promote movement in between the stubbies or gates. Vertical Balance will be a key factor in skill development at this level. The old Molstar or Nastar courses were a good example of vertical balance setting. Set the stubbies 9-10 meters with ½ turn offset.

Objectives

- Promotes vertical movement
- Promotes edging skills
- Enhances vertical balance

Terrain

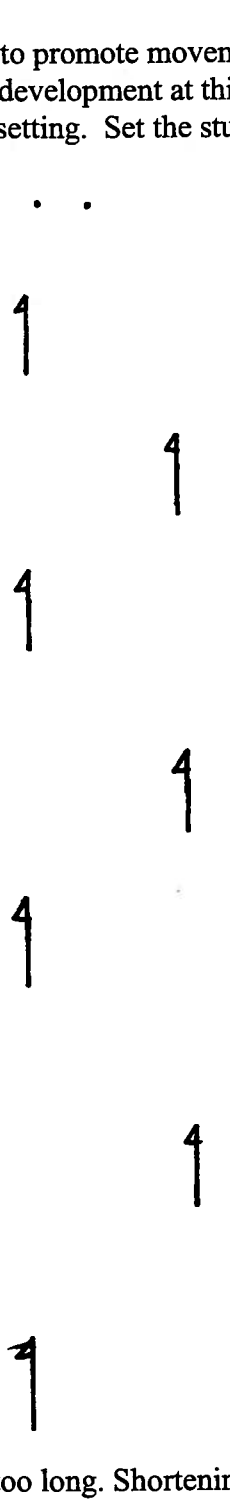
Flat to Moderate

Variations

Stubbies or gates

Turn Shape

½ turns

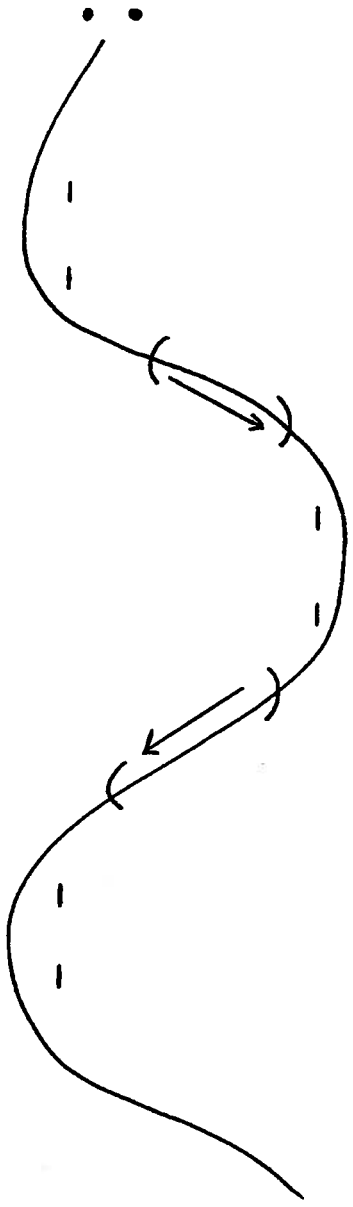


Notes

If the set doesn't cause the skier to move vertically then the set is too long. Shortening the vertical distance between gates will create the vertical movement.

Description

This drill should consist of a ten gate corridor. The distance is important to allow the skier time to recover from one turn to another allowing for forward/backward balance adjustments. You set two stubbies to design the turn shape or you can set single.



Objectives

- Enhances recovery and balance
- Promotes recovery

Terrain

Moderate to flat.

Turn Shape

¼ to ½ turns.

Variations

Stubbies to GS gates.

Notes

Respect the distances between the stubbies. Coaches should encourage linked turns with as little traverse as possible.

Description

The obstacle course that you set serves two purposes. It will provide an excellent warm-up, skill acquisition and versatility.

Objectives

- Provides a warm-up game atmosphere
- Provides versatility training and agility
- It's Fun

Terrain

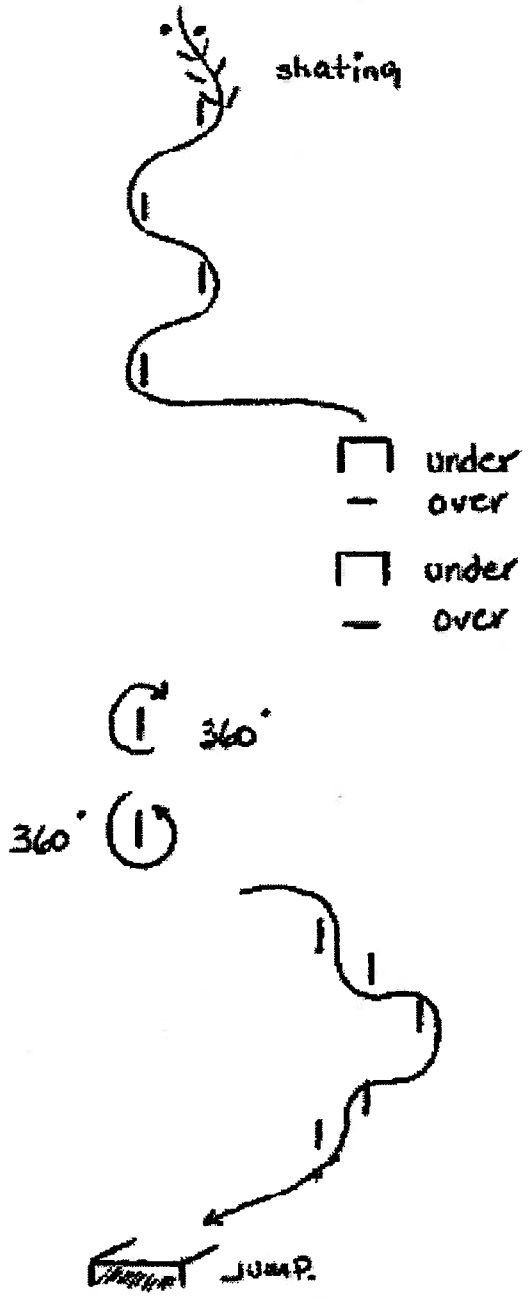
Flat, groomed

Variations

Set a variety of obstacles.

Turn Shape

All

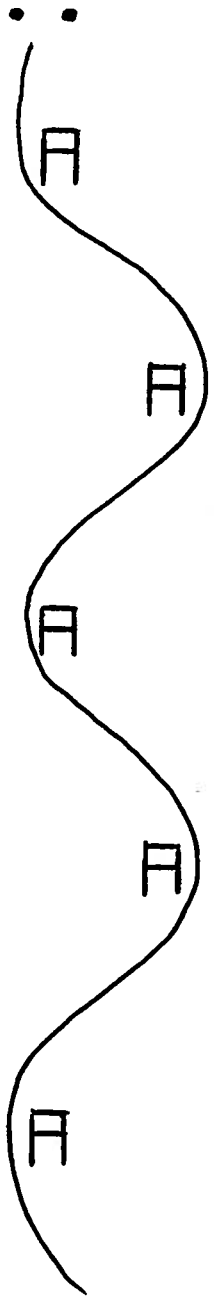


Notes

Use your imagination to create the obstacle course. Set to control the speed at all times. Err on speed being too slow rather than too fast.

Description

This drill is to simulate a short GS course for this level. Set 10-12 normal flagged GS gates. Set a corridor to enhance a high finish rate.



Objectives

- Promotes race like conditions.
- Teach race preparation.
- Promotes mental training.
- Enhances intensity

Terrain

Medium to Flat

Variations

Use hand timing

Turn Shape

½

Notes

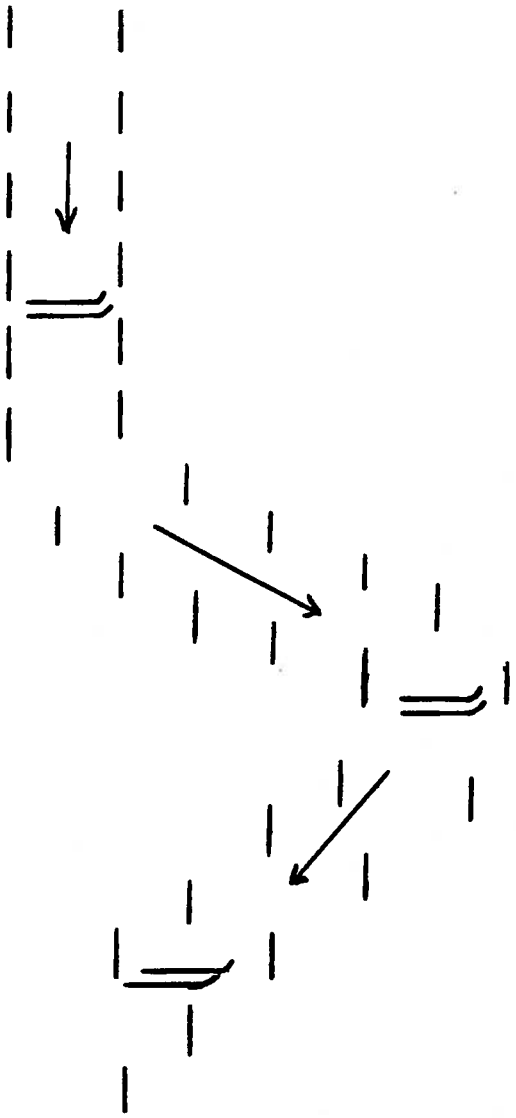
This type of setting is only one aspect of skill development. Try not to use this method of training 90% of the training time.

Description

These drills are used to develop rotational and forward/backward balance. Set the drills on groomed terrain. Give the skier a corridor to sideslip through. Forwards, backwards, diagonal etc.

Objectives

- Will enhance forward/backward balance.
- Enhances upper and lower body separation.
- Enhances edging skills
- Enhances gliding



Terrain

Medium to steep groomed

Variations

Forward, backward, diagonal and rotational slipping.
Use either stubbies or bamboo gates.

Turn Shape

Forwards/backwards/diagonal

Notes

Encourage the skiers to stay within the side slipping corridor parameters. Use slow controlled speeds.

Straight Fall Line Drill (short turns) Fun-damental

Description

This drill consists of a minimum of 10-12 gates set directly down the fall line at exact distance from one another (6-7 metres). This drill is best set with bamboo gates to promote steering.

Objectives

- Promotes steering feet and lower legs
- Promotes strong pole plant skills
- Promotes upper / lower body separation skills
- Promotes looking ahead
- Enhances balance

Terrain

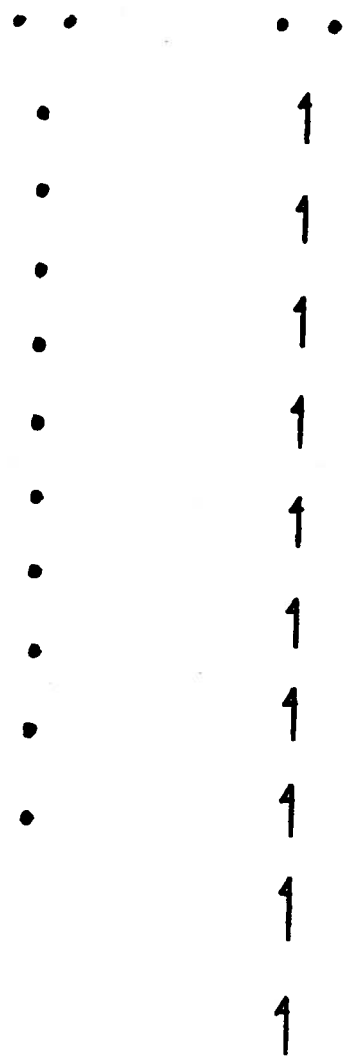
Moderate fall line

Turn Shape

Short turns

Variations

Stubbies or markers.



Notes

Encourage the skiers to maintain focus from start to finish
Ensure that the skiers understand that the goal is to perform linked turns across the hill, as opposed to running straight at the gates
Ensure that the skiers utilize a strong pole plant to stabilize the upper body.

Description

Set using your imagination, a fun agility course that enhances balance. Use jumps, short and long turns that helps versatility.

Objectives

- Help develop balance and agility with drill setting.
- Promotes versatility.

Terrain

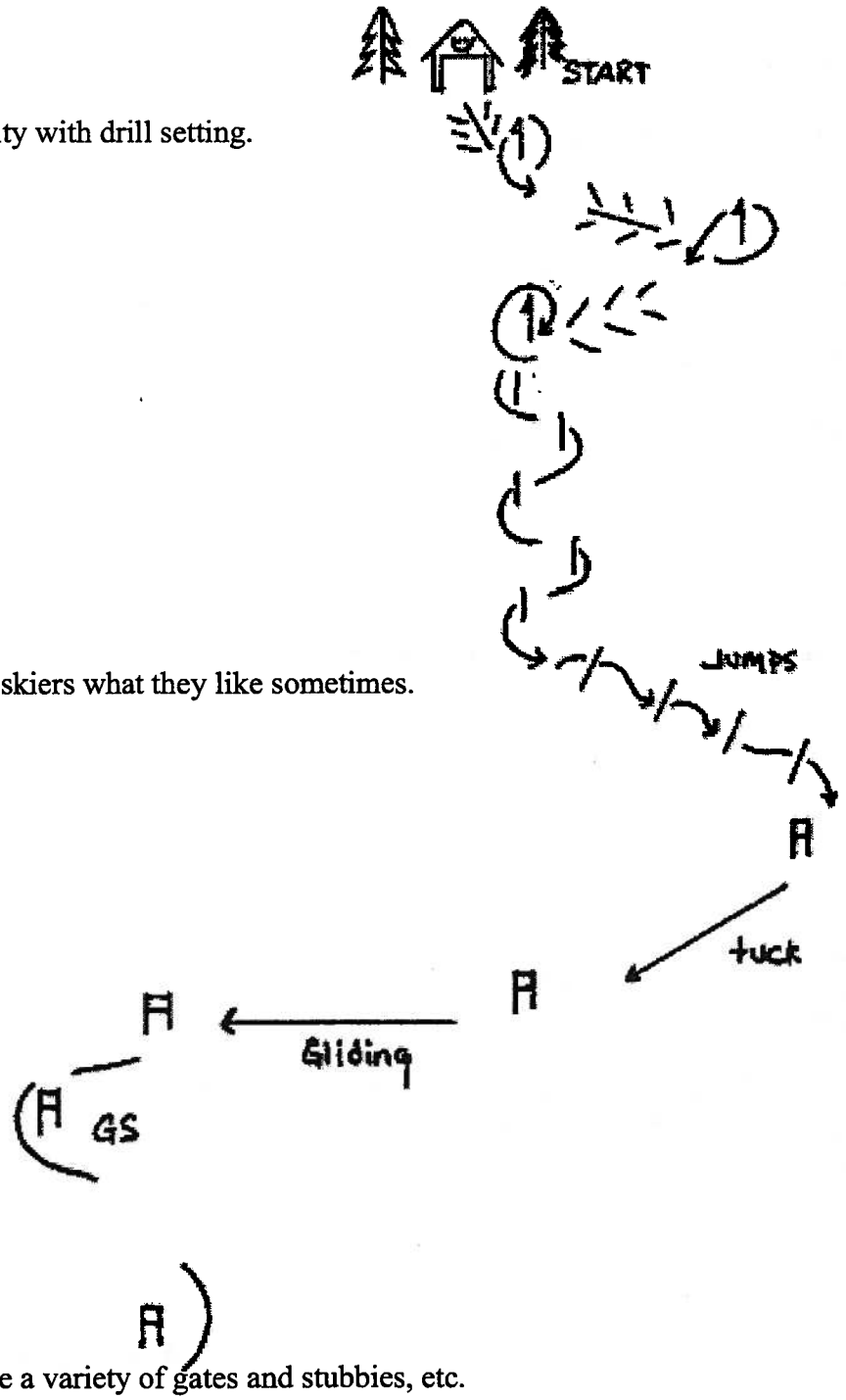
Flat to Moderate.
Terrain garden

Turn Shape

Use the full spectrum

Variations

Use your imagination and ask the skiers what they like sometimes.



Notes

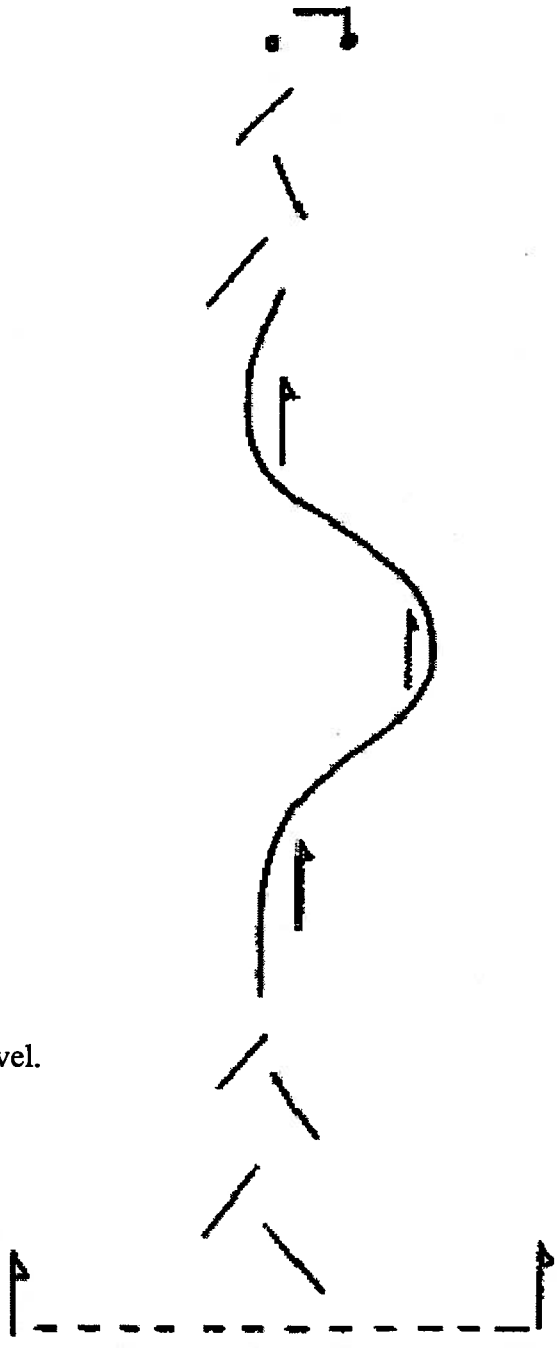
The training course should include a variety of gates and stubbies, etc.

Description

An often overlooked skill at any level is the ability to perform a good start and finish. Strength limitations play a big factor in these skills. It is very important to pattern good start and finish basics.

Objectives

- Promotes good mental skills training.
- Enhances focusing skills



Terrain

Flat to moderate

Turn Shape

Variations

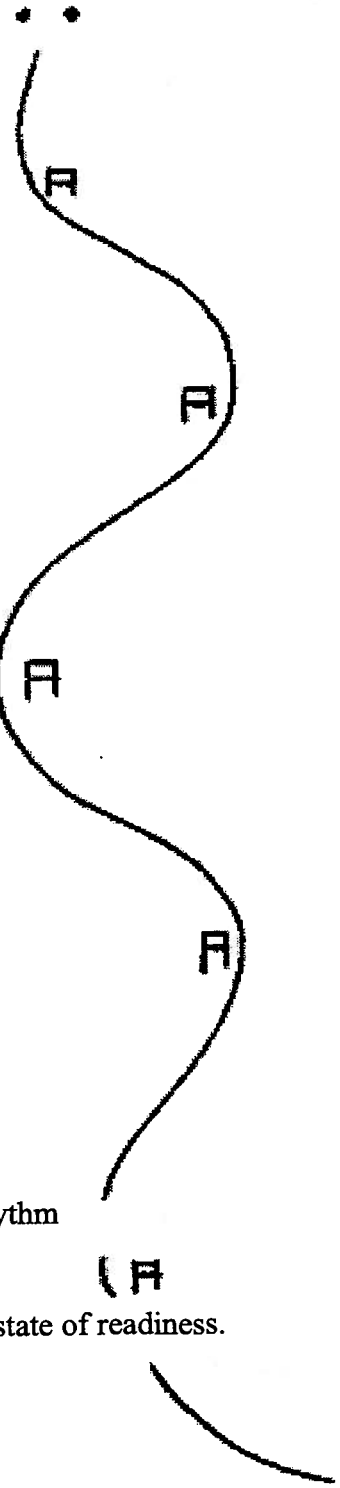
Change the terrain to match strength and skill levels.

Notes

These skills can be developed and maintained at any level. Can be very effective as an alternate plan when lifts are not working or terrain is unavailable.

Description

For Giant Slalom warm up, set a series of 10-12 gates that develop rhythm and confidence. The drill course should develop warm up rather than work out. The drill course should be very accommodating with a high success finish rate.



Objectives

- Develop confidence
- Promotes rhythm

Terrain

Moderate to flat

Turn Shape

½ turns

Variations

Flex trainers
Short durations

Notes

Ensure set allows skier to discover consistent rhythm
Ensure safety.
Ensure attainable finish rate.
Allow the skier to begin training at his/her own state of readiness.

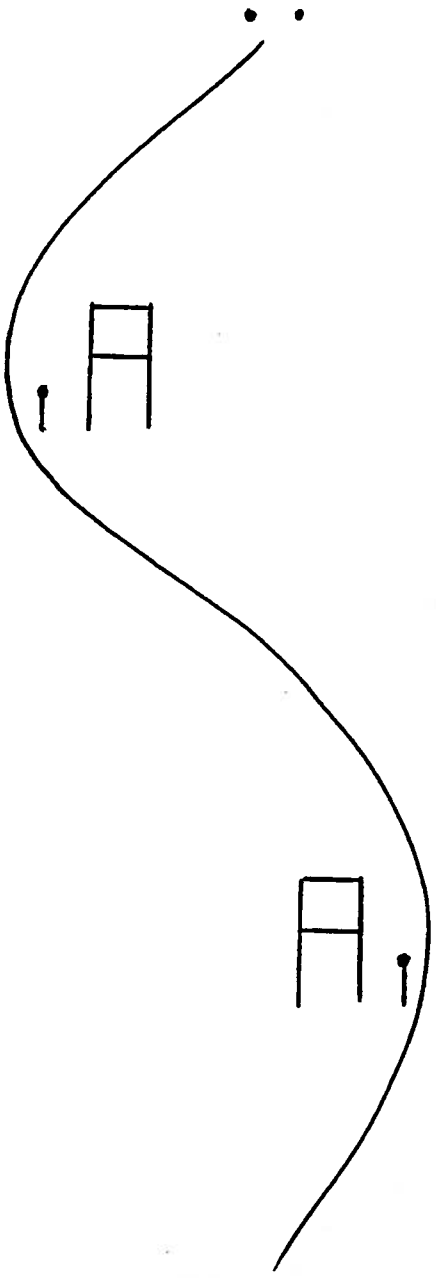
Train to Train

Description

Skier's interpretation of line is often too direct. This drill will help the skiers develop an awareness of running too straight or direct at the gate. Place a marker or stubbies a foot beside the gate. This allows the skier to leave room for the natural body movement in phase two of the turn rather than "pinching" at the gate.

Objectives

- Develops appropriate line.
- Promotes less interference with the gate.



Terrain

Medium

Turn Shape

½ to ¾ turns.

Variations

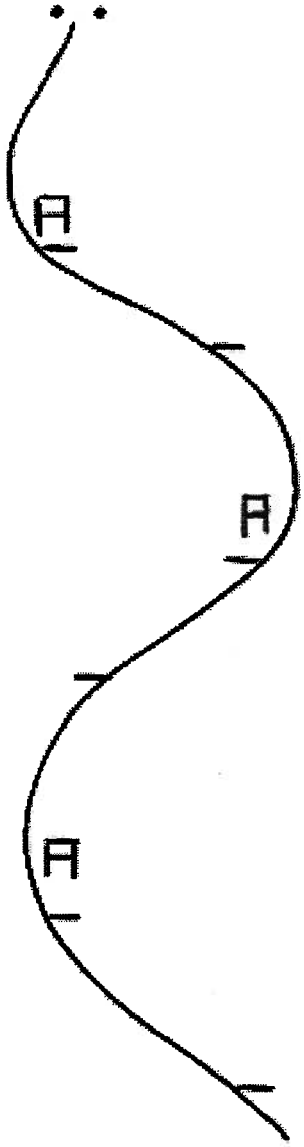
None

Notes

Do not set the stubbies too far from the gate. Skiers will tend to go to the inside of the marker when this occurs.

Description

The drill should consist of 10-12 gates, set in a corridor. The distance is important to allow the skier time to prepare for the next turn. A good distance for this drill is 25 meters between gates.



Objective

- Promote preparation between turns.
- Enhance gliding in phase one
- Enhances forward/backward balance in phase one.

Terrain

Moderate to steep

Turn Shape

½ to ¾.

Variations

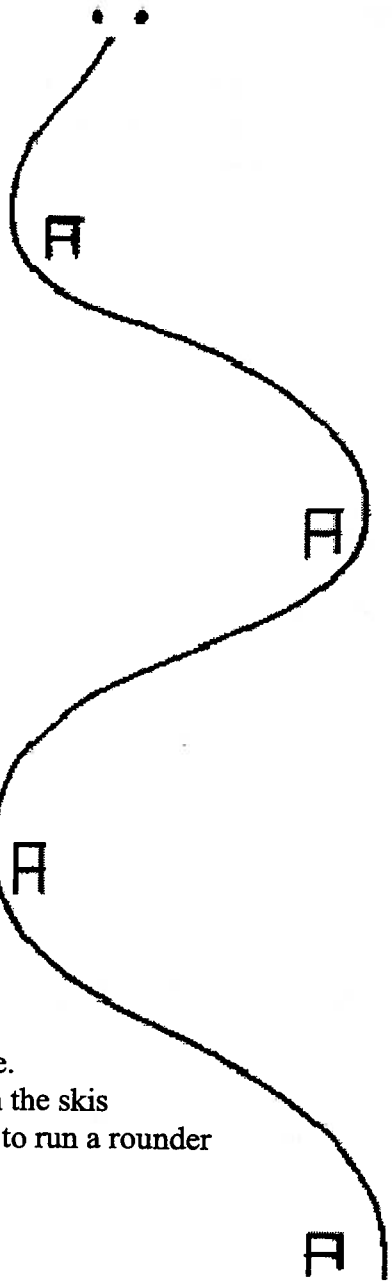
Flex trainers or stubbies.

Notes

Ensure that there is enough distance between the gates to allow preparation time in phase one.

Description

This drill is to develop or pattern lateral balance. The goal is to set the gates longer in vertical distance so the skier utilizes lateral mobility to make the turns vs. vertical movement. The flex trainers should be set towards maximum distances for GS or set towards mini SG .



Objective

- To develop lateral mobility.
- Enhances linking a series of turns.

Terrain

moderate

Turn Shape

½ to ¾.

Variations

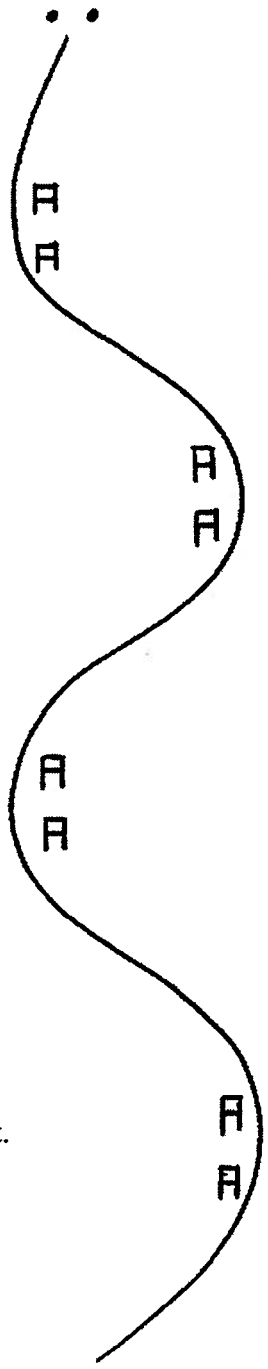
Stubbies or flex trainers.
Can be set on all terrain

Notes

If the skier pinches at the gate the lateral balance will not take place.
The most natural position at the gate is to have the body in between the skis and the gate. With the new technology in ski equipment, it is faster to run a rounder line vs. a straight line, therefore skiers require lateral balance

Description

Two gates are set directly in line with one another down the fall line, with a distance of 2-3meters in between them. The next two gates are set, depending on the steepness of the terrain, with a 4 -6 meter offset, approximately 18 - 25 meters vertical distance. The pattern is repeated with the end effect as a corridor set. This drill will assist the skier in carving through the fall line, with consistent pressure. This drill is the most productive drill for proper turn shape at the gate.



Objectives

- Promotes edging skills
- Promotes pressure building in fall line
- Enhances proper line

Terrain

Moderate to flat.

Turn Shape

Long / shallow arcs ½ turns, progress turn shape.

Variations

Change the length and width of the corridor.
Can use stubbies.
Can use normal GS gates.

Notes

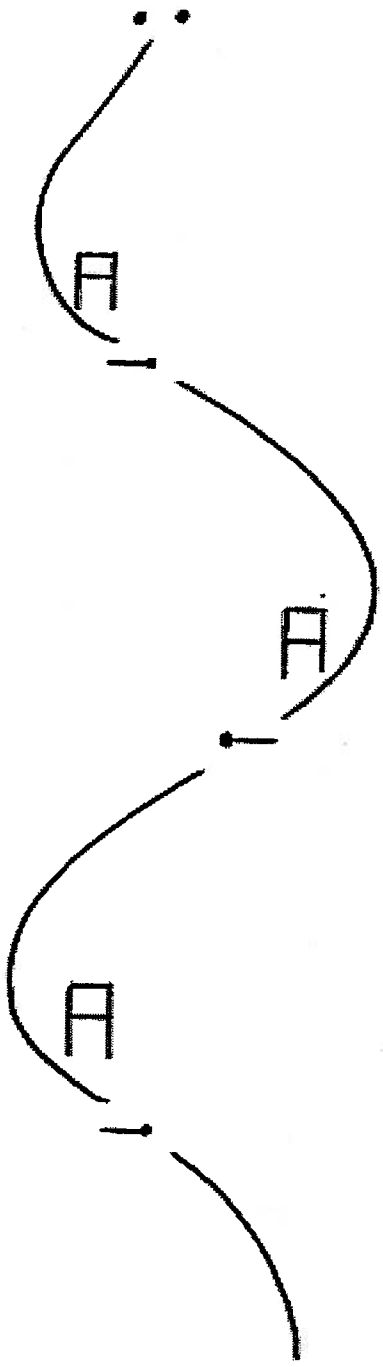
Encourage clean edging in the fall line.
Encourage pressure management through the entire arc.
Do not progress this drill too quickly. Allow skier time to experiment.

Description

Within a simple GS corridor set, place a stubbie across line of travel at the end of the turn. As the skier completes the turn, a strong vertical spring upward is required to jump the obstacle.

Objectives

- Promotes choice of line
- Promotes vertical balance
- Promotes coordination
- Promotes pressure management skills



Terrain

Flat - moderate

Turn Shape

½ to ¾ turns.

Variations

Progress terrain.

Notes

Encourage excessive vertical jump
Ensure skier lands in a balanced position
Encourage the skier to direct the skis back to gate

Description

As with the Slalom corridor, the set should have consistency in the vertical and horizontal distances. Sequence from long shallow arcs to full GS shape with more elite skiers. Skier performs turns with emphasis on symmetry from side to side.

Objectives

- Enhance all skills
- Promotes patterning

Terrain

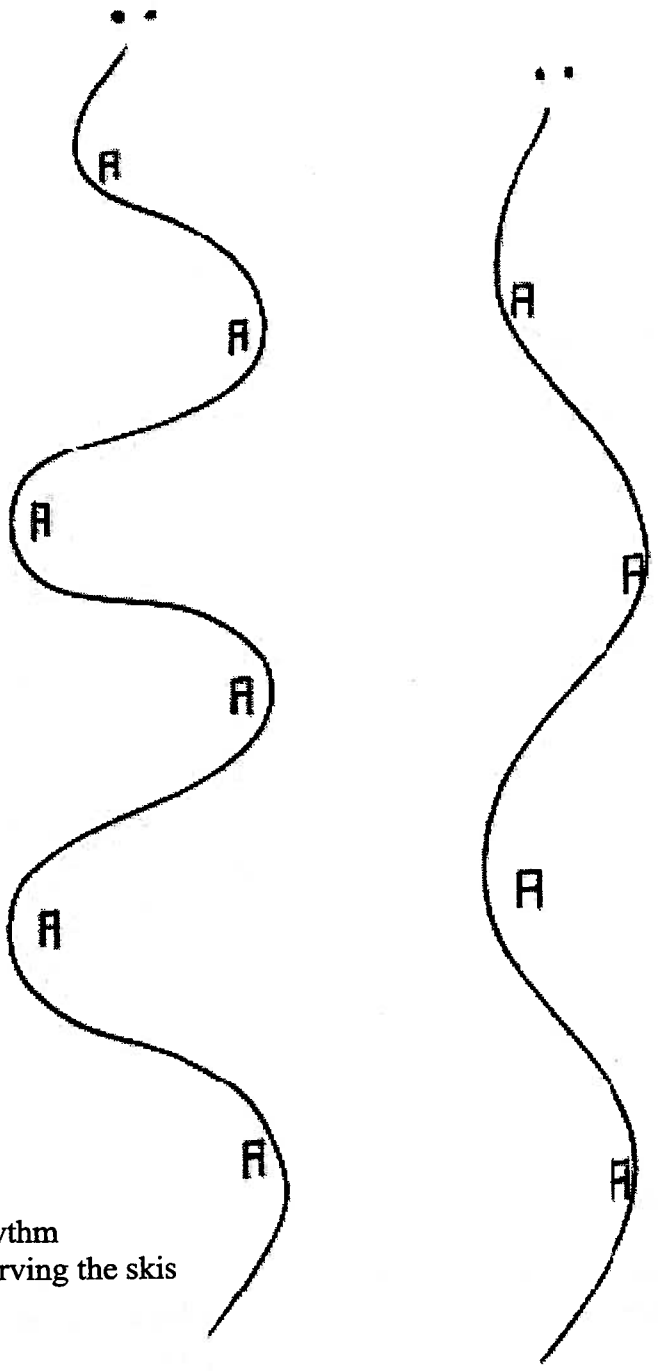
Flat to steep

Turn Shape

¼, ½, ¾, full turns.

Variations

Without poles
Using stubby gates



Notes

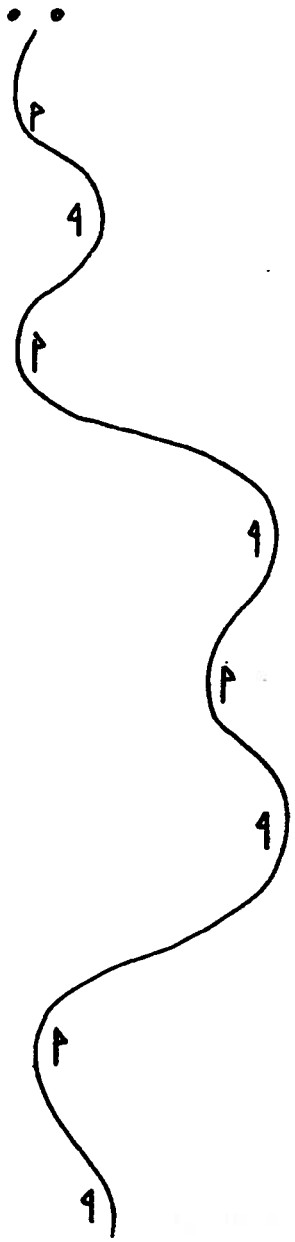
Ensure set allows skier to discover consistent rhythm
Ensure that the focus of performance stays on carving the skis
Encourage skier to look ahead

Description

Three gates are set 8 meters apart directly down the fall line, at the third gate, the setter increases the distance to 10 - 12 meters with an offset of 3 -4 meters. The pattern is repeated. This drill is best set with bamboo gates. Goal of drill is performance of linked, completed turns with no loss of speed when the rhythm changes and helps phase one for balance and gliding.

Objectives

- Promotes gliding.
- Promotes rhythm change
- Promotes pole plant skills



Terrain

Moderate to steep

Turn Shape

½ turns to ¾

Variations

Stubbies.
Flex trainers

Notes

Ensure that the skier is focussed on gliding in phase one.
Ensure that the skier anticipates the rhythm change and adjusts the line on the third turn
Ensure that the skier maintains strong pole plant to stabilize the upper body

Description

Two gates are set directly in line with one another down the fall line, with a distance of 2 meters in between them. The next two gates are set, depending on the steepness of the terrain, with a 1 to 3 meter offset, approximately 9 - 11 meters vertical distance. The pattern is repeated with the end effect as a corridor set. This drill will assist the skier in learning to carve through the fall line, with consistent pressure.

Technical Objectives

- Promotes pressure build-up in the fall line
- Promotes edging skills
- Promotes upper / lower body separation
- Promotes carving

Terrain

Moderate

Turn Shape

½ turns then progress to ¾.

Variations

Various types of gates.
Variety of terrain.

Notes

Excellent drill when progressively developed.
Start this drill with shallow offset in stubbies until skier is comfortable.
Encourage the skier to focus look well ahead.
Encourage the skier to develop and maintain rhythm

Description

Corridor sets describe any drill set where the vertical and the offset distances remain consistent throughout the entire set. This type of drill is excellent for developing rhythm. A basic corridor to acquire skill acquisition usually consists of 10-15 gates.

Objective

- Promotes rhythm and timing
- Enhances patterning for skill acquisition

Terrain

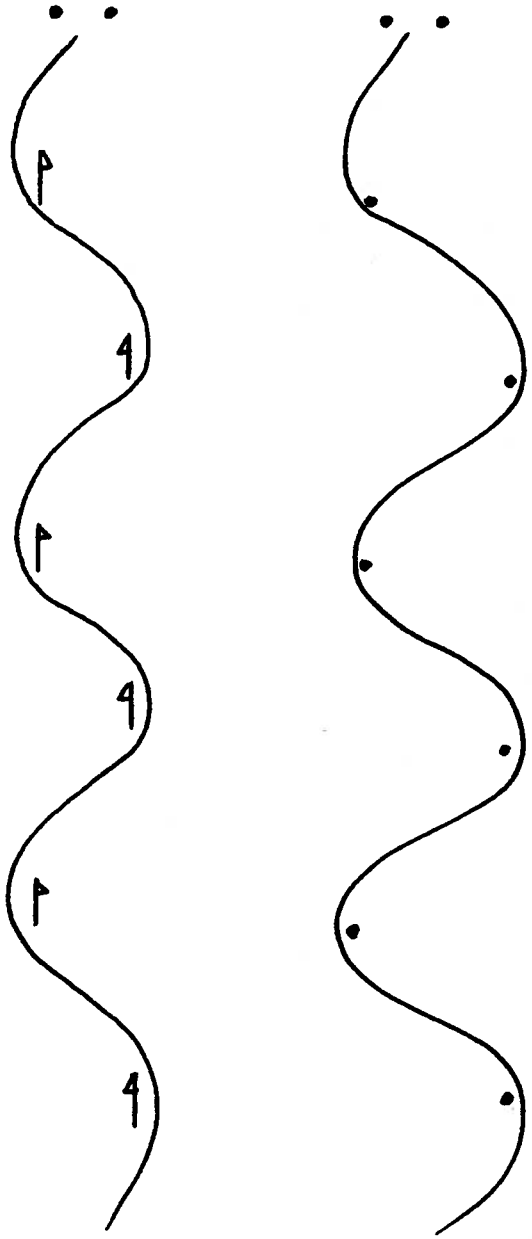
Flat to steep

Turn Shape

½ turns then progress.

Variations

Change the length and width of the corridor.
Utilizing variety of gates



Notes

Set this drill according to the strength limitations of the skier. For example: the entry level skier should work with shallow arc shape on consistent flat to moderate terrain using stubbies.
Ensure the skier is focussing on what the ski is doing on the snow (as opposed to the gates themselves).
Ensure that the set compliments the goal of the session.

Description

Defined corridor where the skier should perform the drill. The defined area can be in the shape of an hourglass, vertical, diagonal, etc.

Objectives

- Promotes a controlled training environment
- Enhances tactics
- Enhances balance
- Enhances looking ahead skills

Terrain

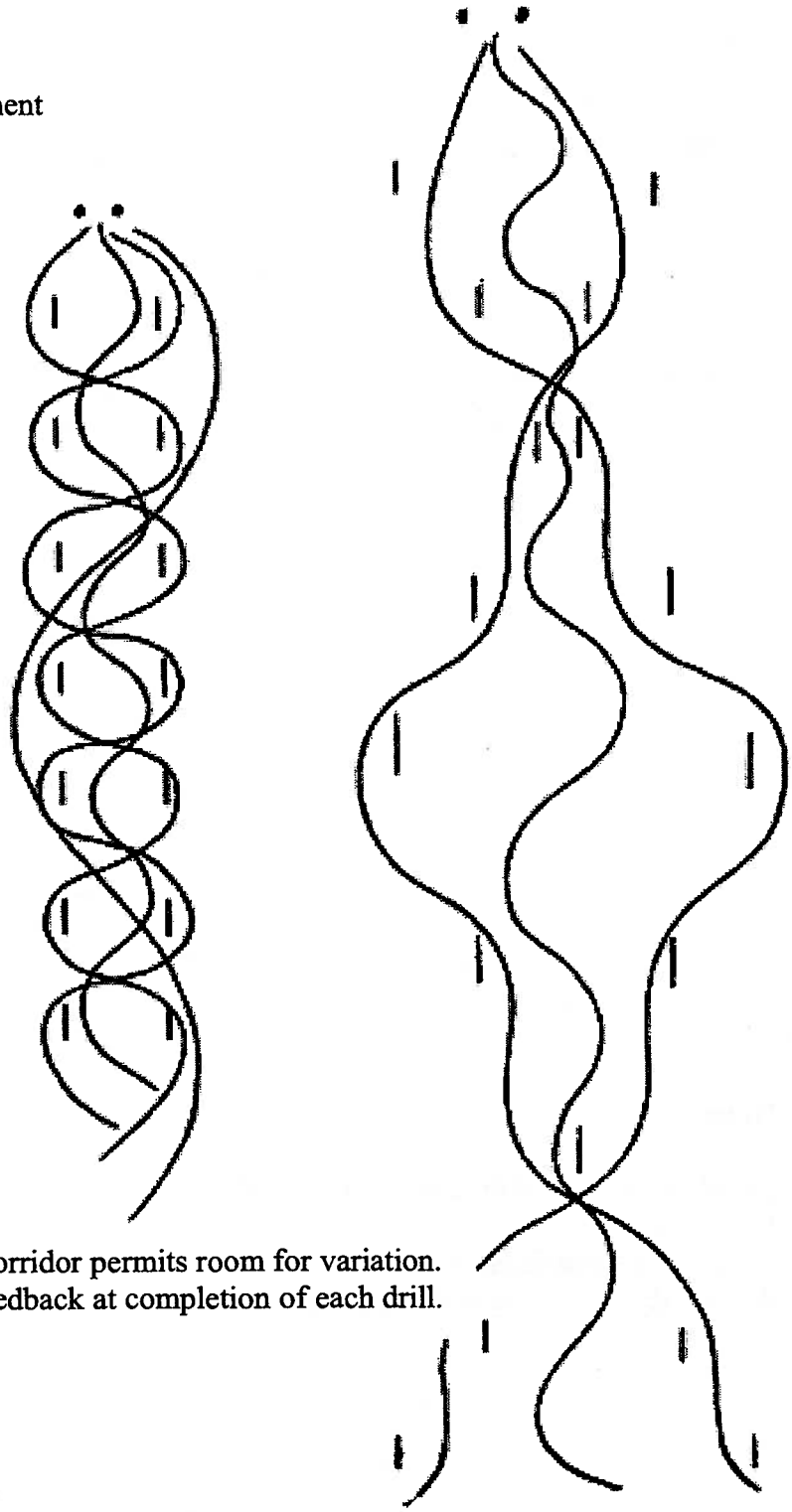
Consistent flat to steep

Turn Shape

Determined by the corridor

Variations

One ski
No ski poles
Slide slip exercises



Notes
Limited only by imagination, ensure that corridor permits room for variation.
Encourage skier to provide his /her own feedback at completion of each drill.

Description

For Slalom warm up, set a series of ten to fifteen gates that develop rhythm and confidence. The drill course should develop warm up rather than work out.

Objectives

- Develop confidence through warm-up
- Promotes rhythm

Terrain

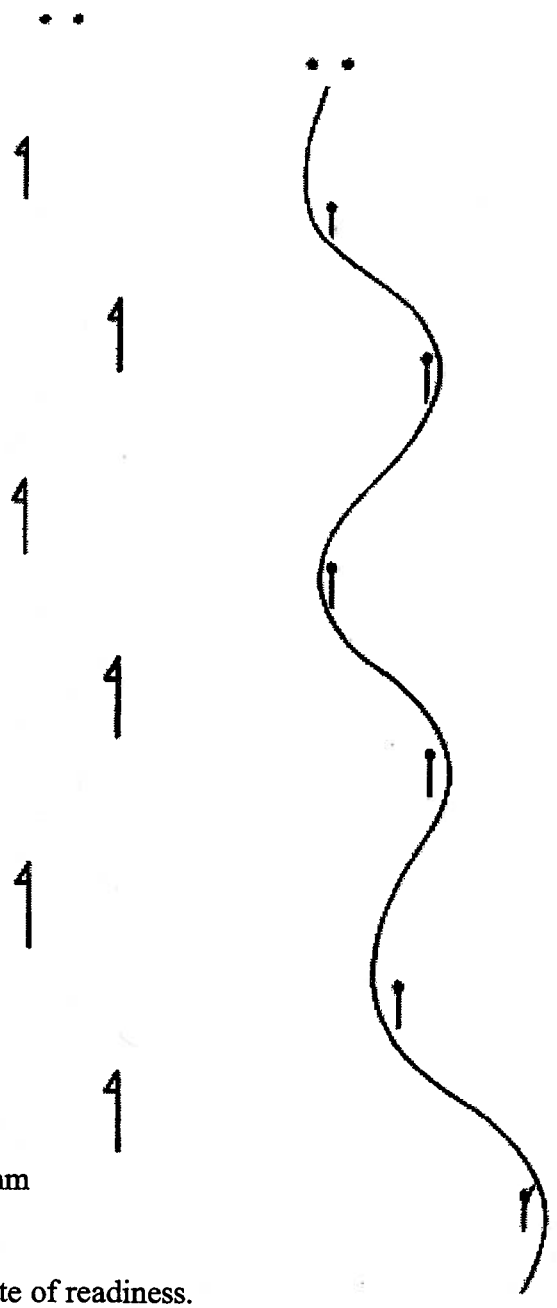
Medium to flat

Turn Shape

½ turns

Variations

Short durations



Notes

Ensure set allows skier to discover consistent rhythm
Ensure safety.
Ensure attainable finish rate.
Allow the skier to begin training at his/her own state of readiness.

Description

Today's slalom is much closer to GS than ever before. This drill starts with 4-5 GS panels to develop the line and rhythm. Then set your Slalom corridor 8-10 gates, finish with 3-4 GS panel gates. The line should be the same, back to every gate whether it is GS or Slalom.

Objectives

- Pattern the appropriate line.
- Enhances rhythm

Terrain

Medium

Turn Shape

½ to ¾.

Variations

Use the terrain from steep to medium or medium to flat.

Notes

This drill is excellent to pattern rhythm and line. Set the GS panels the same as the Slalom corridor to develop the same turn shape.

Description

This drill consists of continuous linked hairpins. The hairpin distance is 6 m. The exit of the hairpin is 12 -14 m, and the distance from the single approach gate is 9 - 11 metres.

Objective

- Develops tactical skills
- Develops rhythm change adaptation
- Promotes quickness

Terrain

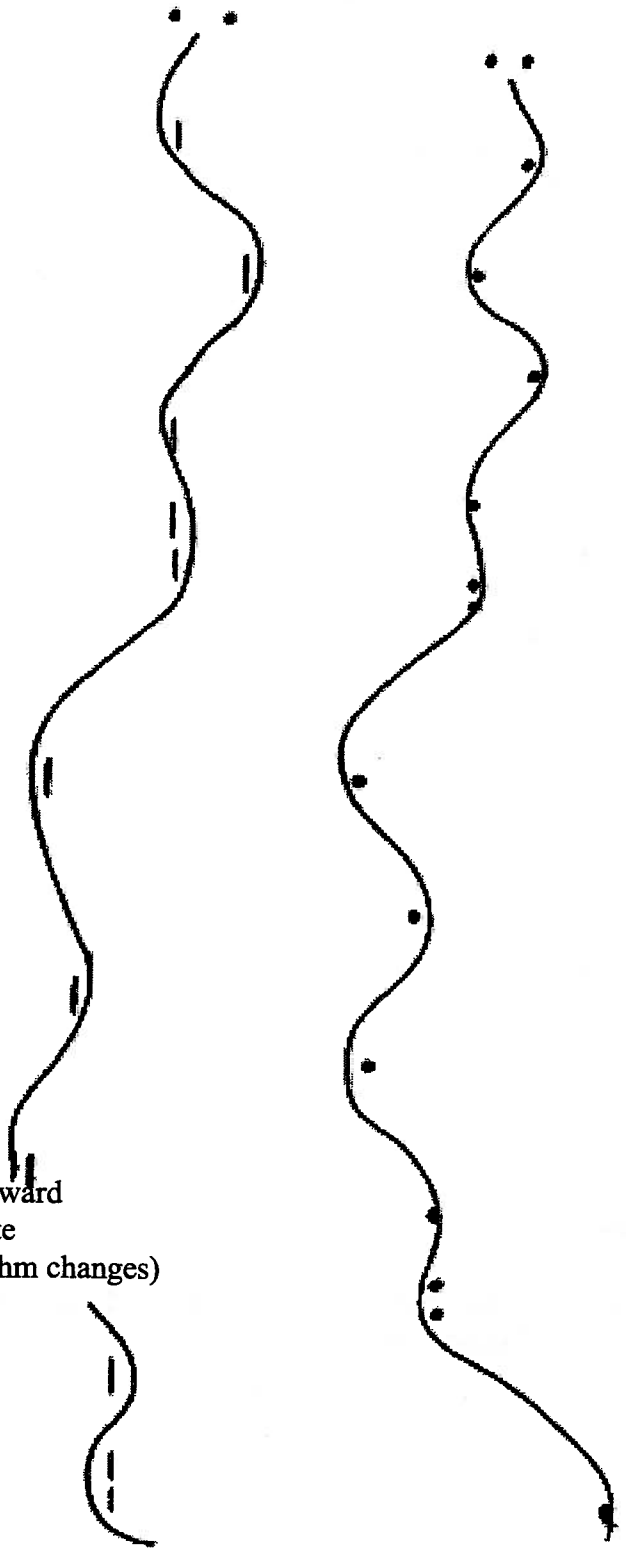
Consistent moderate slope

Turn Shape

Slalom hairpin

Variations

Progress from stubbies to flex trainers.



Notes

Ensure that the skier's centre of mass is moving forward
Utilize various clearing methods through hairpin gate
Encourage mental management skills (focus on rhythm changes)

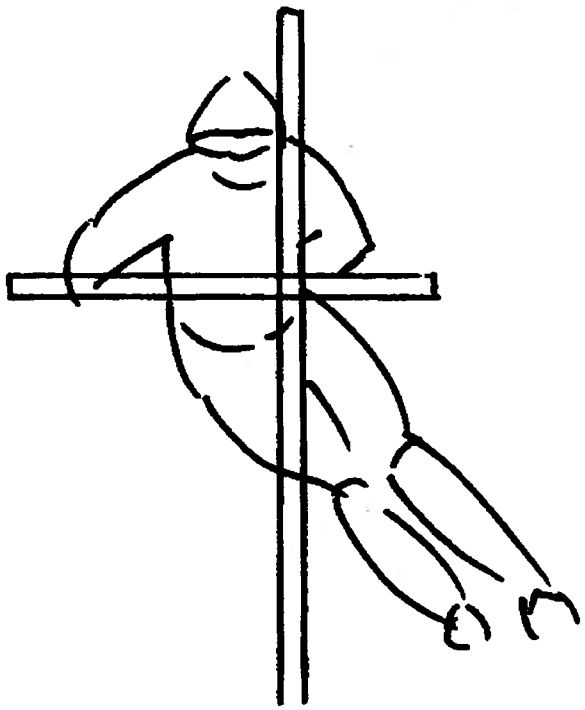
Horizontal Gate in Hinged Gates (Slalom) Train to Train

Description

This drill is an effective way to bring confidence into the gates, and to help develop proper clearing technique. The skier holds his/her ski poles in both hands out and in front of body, at sternum height. Within a corridor set, the skier attempts to clear the gate at the middle point of the ski poles without moving the body to "reach" for the gates. Hands/ elbows remain up and forward through the entire run, with the emphasis of strengthening the arms through the gate.

Objective

- Introduces clearing skills
- Enhances confidence



Terrain

Consistent flat to moderate

Turn Shape

Consistent corridor set - basic slalom set

Variations

Change the length of the course.

Notes

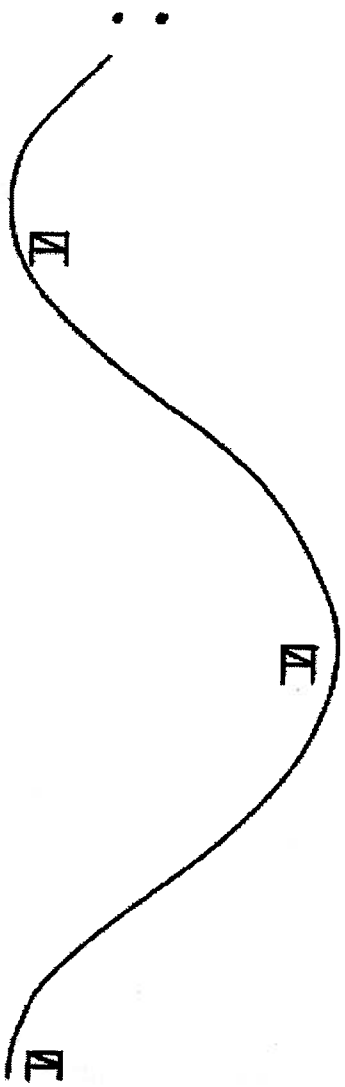
Challenge the skier to ensure middle of poles stays in between eyes, arms do not move side to side.
Ensure the skier keeps elbows well ahead of the core, and poles at eye level
Ensure that the skier maintains vertical movement in the legs.

Description

Set the flagged gates at a minimum of 30 meters. The goal of the training is to develop or pattern SG speed training. The width of the set is dependant on the safety aspects and width of the terrain. Flat terrain is excellent to build confidence. Remember to give the skiers inspection time prior to training and safety considerations are the most important aspect of setting.

Objectives

- Develop confidence
- Enhances line and direction
- Develops the confidence to look for speed
- Enhances a balanced position



Terrain

Flat to medium

Turn Shape

½ to ¾

Variations

Progress the velocity in speed.
Medium to flat terrain.

Notes

This type of training is more intense for everyone especially the coach. Set to control the speed by using long sweeping turns. If you need to control the speed in a section, set double gates to control the arcs. Visibility is very important factor. Do not train speed with out panels. This type of training is an important piece of the puzzle in developing Canadian skiers.

Description

For Giant Slalom warm up, set a series of 12-14 gates that develop rhythm and confidence. The drill course should develop warm up rather than work out. The drill course should be very accommodating with a high success finish rate and change the rhythm at least once.

Objectives

- Develop confidence
- Promotes rhythm

Terrain

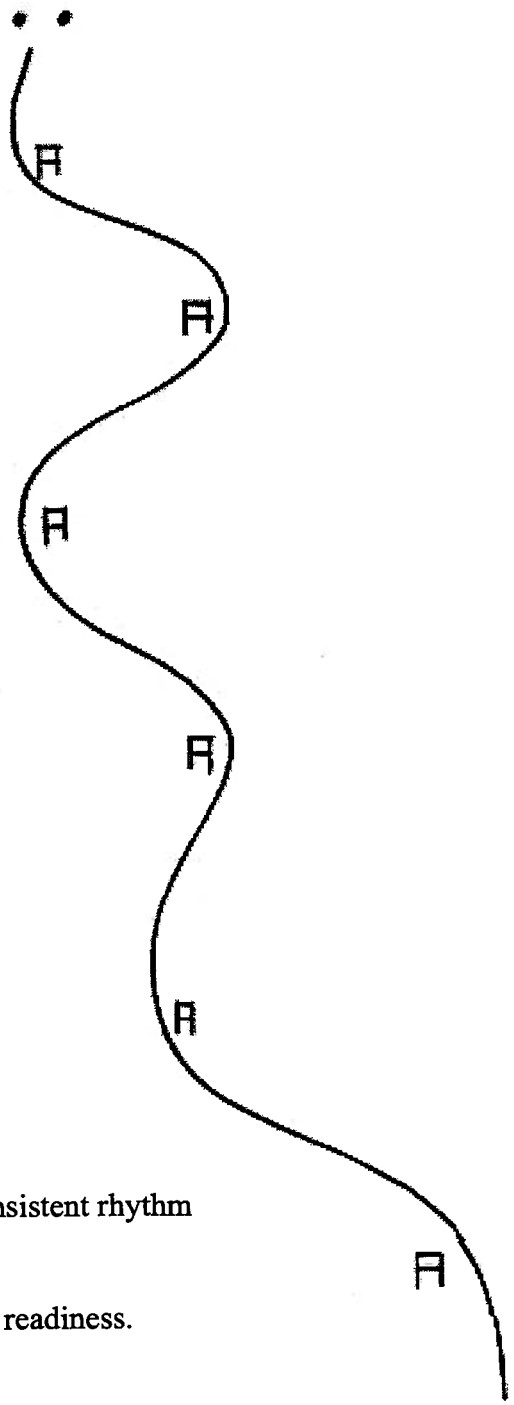
Moderate to Steep

Turn Shape

¾ to full

Variations

Change the terrain and rhythm
Short durations



Notes

Ensure set allows the skier to discover and maintain consistent rhythm
Ensure safety.
Ensure as high a finish rate as possible.
Allow the skier to begin training at his/her own state of readiness.

Description

Make a handle bar that is shorter than shoulder width. This will allow the skier to pass by the gate with out interference form the training aid.

Objectives

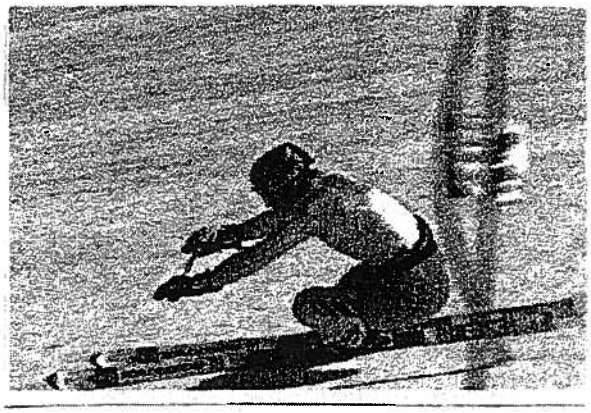
- To ski a GS training course using the handle bar to help discipline the arms and upper body.

Terrain

Medium to Steep

Turn Shape

¾ to full



Variations

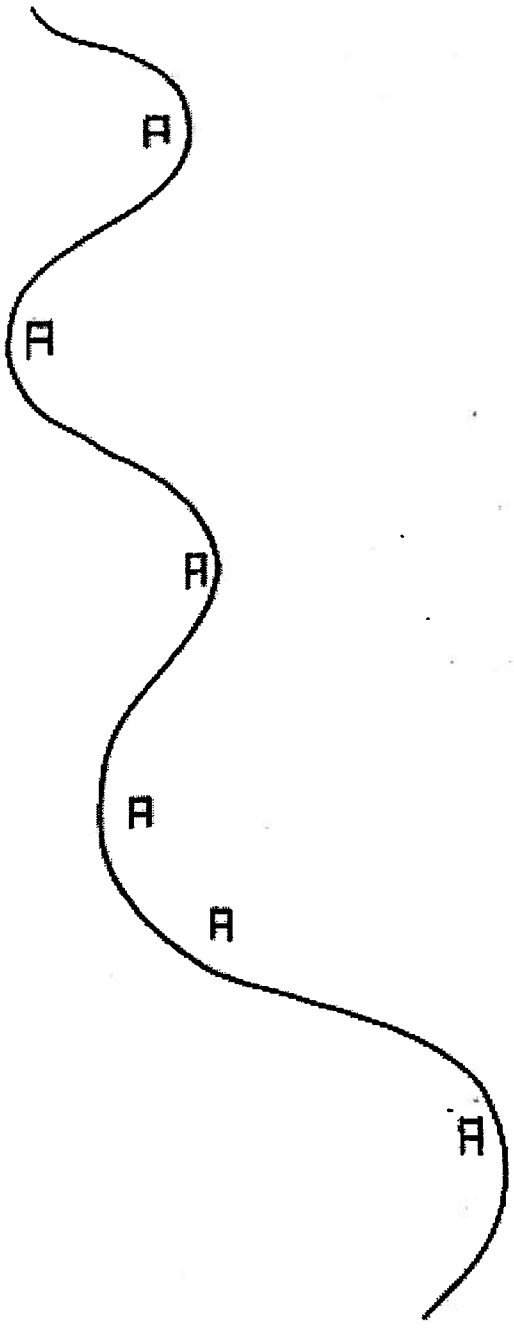
The closer the hands are the more difficult the drill becomes.

Notes

Ensure the handle bar is closer in width than the shoulders. The skier will hook the gate with the inside arm if the handle bar is too wide.

Description

Simulate a ¾ to full Giant Slalom course with timing. The intensity will increase with race simulation. Two to four runs is all you need for this drill.



Objectives

- Enhances mental training
- Promotes intensity
- Promotes race like situation.
- Develop skier's personal race prep routines

Terrain

Flat, moderate to steep

Turn Shape

Use the full Monte

Variations

Change the snow and weather conditions
Create situations to develop coping skills for the athlete.

Notes

This type of training is very effective during the Specific Preparation phase of your seasonal plan. A coach should not be setting this type of course all the time.

Description

Mark Sharp designed this drill for Allison Forsyth to help her slalom line. Set half turn stubbies in a corridor on flat terrain. The goal of the drill is to ski appropriate line by straddling every stubbie. Every turn must see the ski has to go back towards the stubbie with no splitting of the skis. If the skis are splitting, the skier is cheating because the line is too short. One cannot do this drill if you're not on line.

Objectives

- Helps confidence
- Promotes line
- Promotes proper mechanics.

Terrain

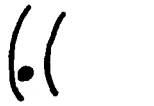
flat

Variations

Change the terrain.

Turn Shape

½ to ¾.



Notes

This drill is for confirming line, peed and confidence. Excellent drill for getting the line up and out from the gate.

Impossible Flush. (Slalom) Train to Compete

Description

Set starts with a vertical distance of 10 - 12 metres, every 2 -3 gates a metre is dropped until the last few gates are down to 2 metres. Set should be very exact, and very straight. Set with hinged gates.

Objectives

- Promotes balance
- Promotes tactics
- Promotes timing and coordination skills
- Promotes a challenging environment

Terrain

Consistent flat to moderate

Variations

One ski
Without ski poles

Notes

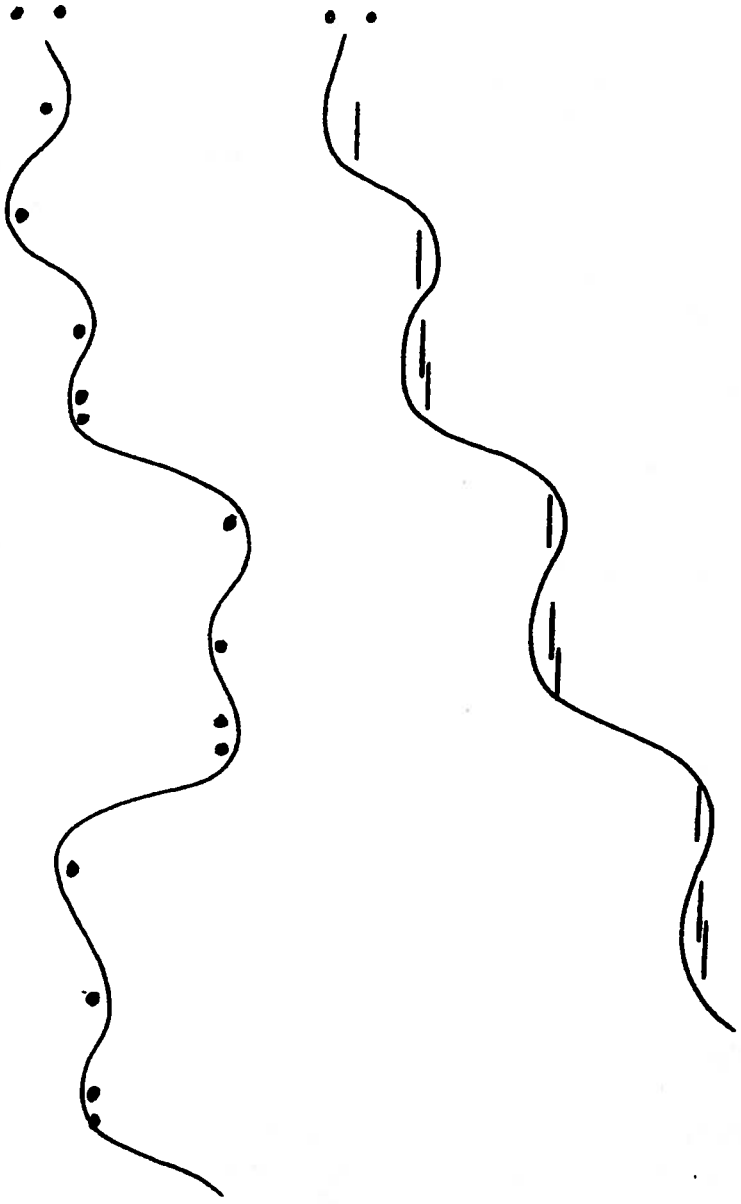
Ensure that the skier knows that the distances drastically decrease
Promote "anything goes" to enhance quickness and recovery skills
Encourage mental management skills (broad internal focus)

Description

Drill consists of continuous linked hairpins. The hairpin distance is 6 m. Exit of the hairpin is 9-11m and the distance from the single approach gate is 9-11 m.

Objective

- Develops tactical skills
- Develops rhythm change adaptation
- Promotes quickness



Terrain

Consistent moderate to steep slope

Turn Shape

Slalom hairpin

Variations

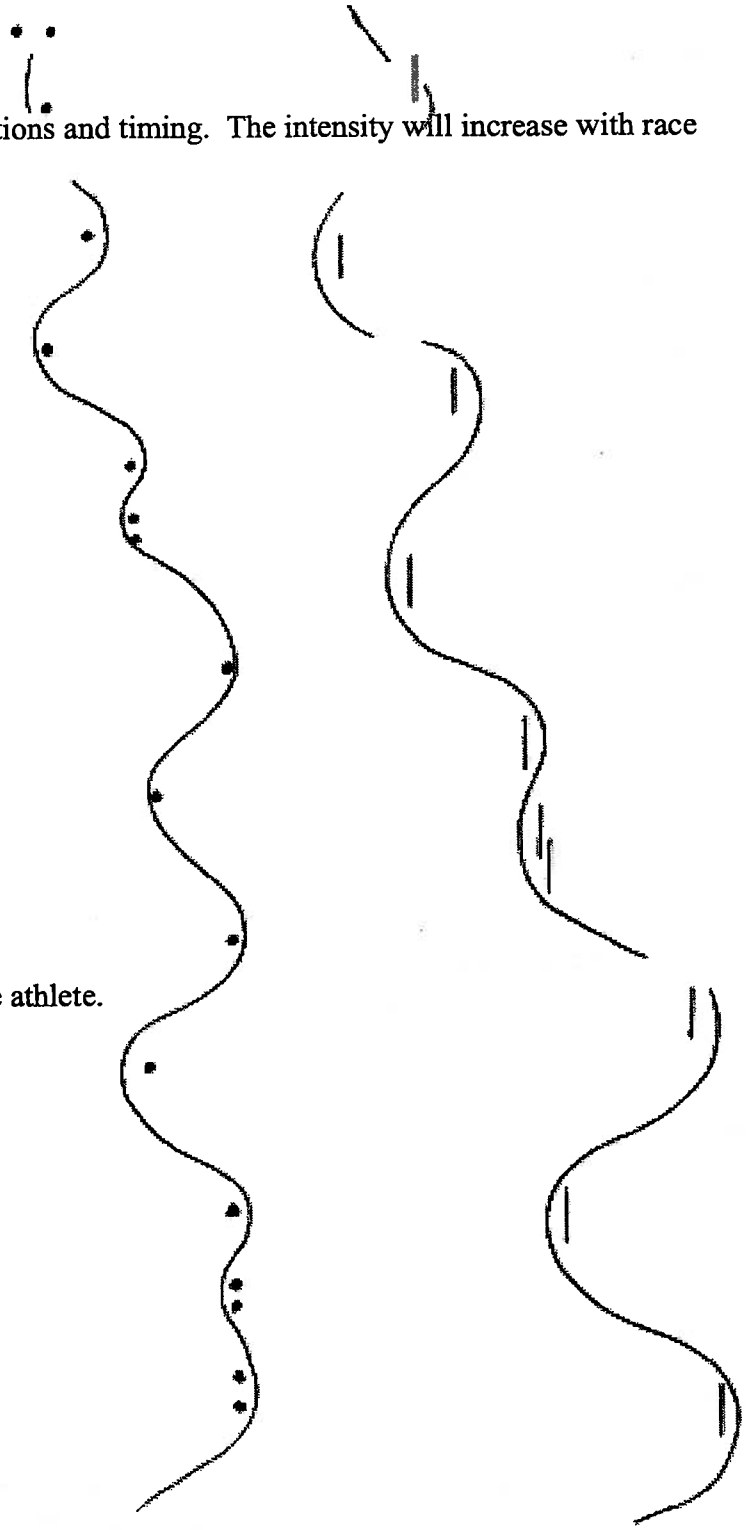
Change the terrain to add break-overs

Notes

Ensure that the skier is looking well ahead, with the centre of mass moving forward ut of combinations Encourage mental management skills (focus on rhythm changes) with no loss of speed.

Description

Simulate a ¾ to full slalom course with combinations and timing. The intensity will increase with race simulation.
Two to four runs is all you need for this drill.



Objectives

- Enhances mental management training
- Promotes intensity
- Promotes race like situation.
- Develop skier's personal race prep routines

Terrain

Flat, moderate to steep

Turn Shape

Use the full Monte

Variations

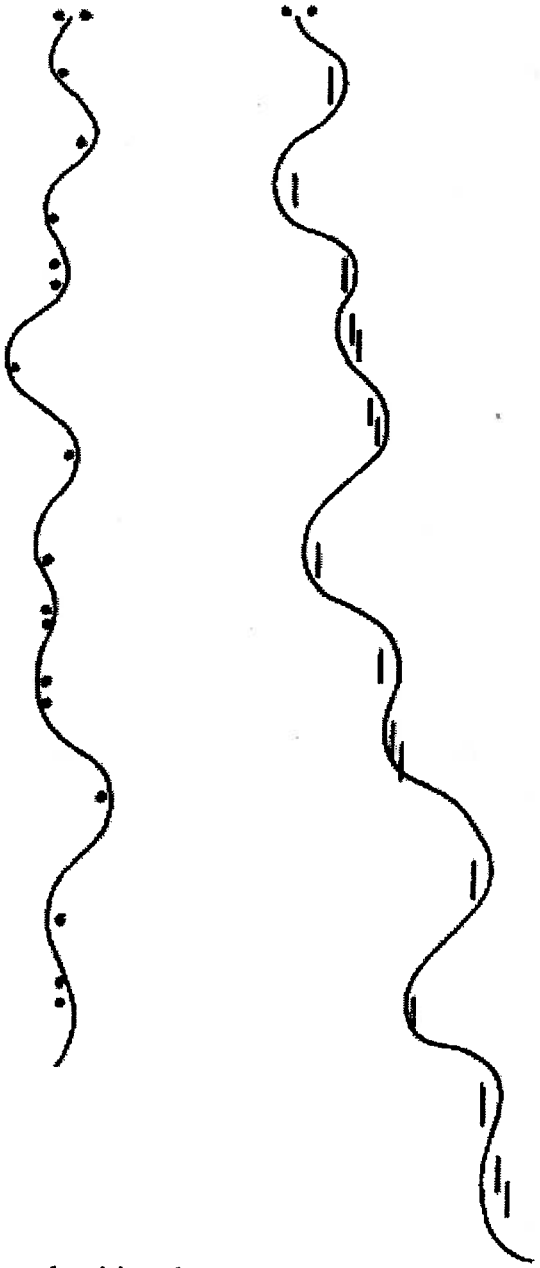
Change the snow and weather conditions
Create situations to develop coping skills for the athlete.

Notes

This type of training is very effective during the Specific Preparation phase of your seasonal plan. A coach should be setting this type of course more often for this skill level.

Description

Set a series of combinations, either flushes or hairpins. The drill helps the skier learn to cope with the transitions from long to short turns. Use 3-4 gates and set a combination, then repeat the drill and change the combination.



Objectives

- Promote quickness training
- Enhances exits and entrances into combinations.
- Improves transitions from long to short turns.
- Enhances arm position for clearing.

Terrain

Flat to Medium

Turn Shape

½ turns to straight.

Variations

Change the terrain and series of combinations.

Notes

The drill will help the skiers in the transition from entering and exiting the combinations. Use the required regulations for the combinations but vary the vertical and offset distances so the skier learns how to maintain speed or to accelerate. The combination should not slow the skier's speed.

Description

Simulate a ¾ to full SG course with timing. The intensity will increase with race simulation. Two to three runs is all you need for this drill. Have the skiers perform a good inspection prior to training.

Objectives

- Enhances mental management training
- Promotes inspection techniques.
- Promotes race simulation.
- Develop athlete's personal race prep routines

Terrain

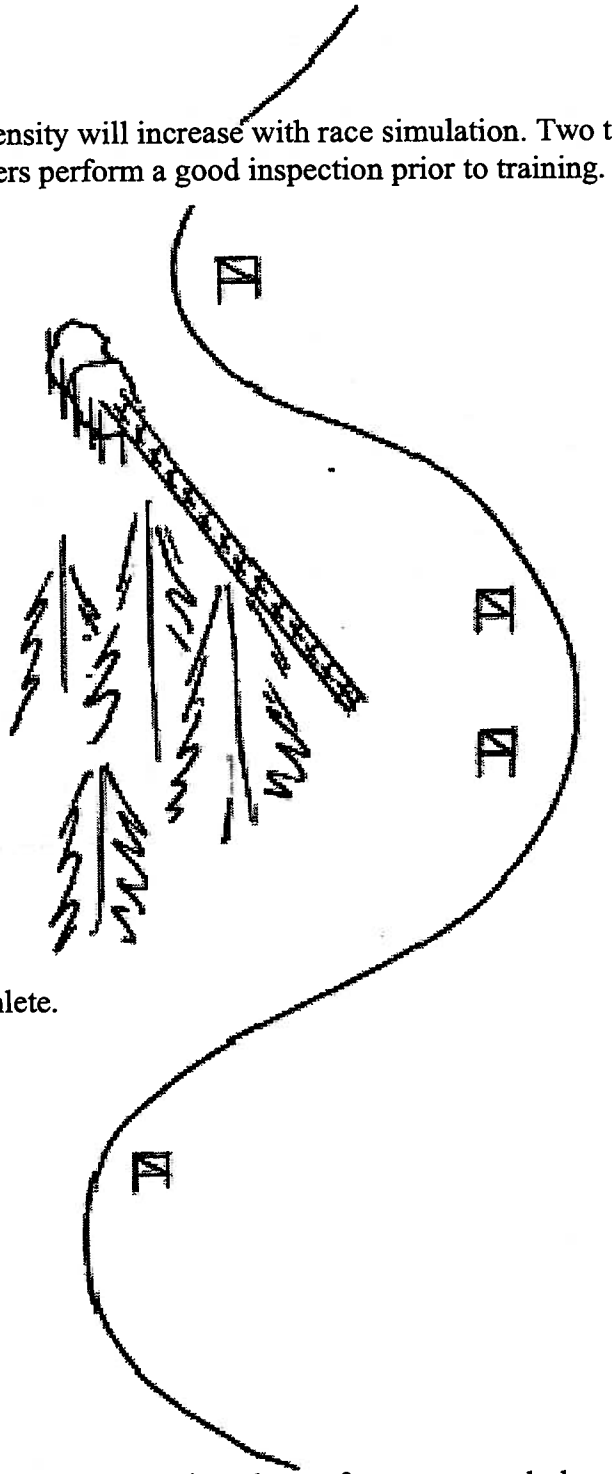
Flat, Moderate to steep

Turn Shape

Set to the hill to control the speed.

Variations

Change the snow and weather conditions
Create situations to develop coping skills for the athlete.
Use moderate air time with the jumps.



Notes

This type of training is very effective during the Specific Preparation phase of your seasonal plan. A coach should be setting up this type of situational training more often for this skill level. Super G training requires more detail to the safety aspects prior to training.

Concluding Remarks – AIM 2

Skill Acquisition and Sequencing

Skill acquisition occurs in stages that are relative to an individual's physical, psychological, social and emotional growth and maturation rate. It is systematic and predictable.

Sequencing a training regimen is necessary for skill acquisition to occur. Sequencing training involves the following:

- Selecting the appropriate terrain
- Matching the drill to the skill level
- Allowing time for the skier to adapt to the demands of the prescribed task
- Ensuring there is some success in the attempts
- Changing the right variable to challenge further adaptation
- Patience with skier progress
- Creativity and resourcefulness

Keep it simple and safe.

Guidelines

for basic course setting

INTRODUCTION

These articles are designed to guide coaches through the basic principles of course setting relative to the skill and age level of the participants. It will reflect the most contemporary specifics of each training level and event. It will also help coaches understand the safety requirements necessary for effective course setting with safety and risk assessment as priorities.

Course design and setting is an essential component of on-hill training and competition. Coaches must possess the ability to design training courses for event specific skill development as well as set courses for competition that will test the abilities of the most skilled participants yet yield a highest finish rate.

Setting effective training and competition courses requires the following:

Exposure to qualified course setters
Practical experience (time on task)
Exposure to different course designs (variety)
Exposure to varying terrain and changing snow conditions (environmental factors)
Exposure to setting speed events as well as technical settings (versatility)
Exposure to setting in adverse environmental conditions
Setting to achieve the highest success rate possible

The course setter is solely responsible for the design of the course. The set will directly impact the performance of participants.

Training courses should be set with variety in mind in order to provide an opportunity for the participants to acquire new event specific skills as well as challenge their existing skills. Competition courses should be designed to provide the participants with the opportunity to test their newly acquired skills under compelling conditions with timing.

Many coaches at the domestic level are confident in designing slalom and giant slalom courses in most situations. Course setting for speed events requires more exposure to qualified coaches and practical experience in risk assessment for Super G and downhill speeds.

The Canadian Ski Coaches Federation recommends that apprentice coaches improve their course setting abilities for speed events by attending as many higher caliber competitions as possible as well as assisting experienced coaches wherever possible. In this way, coaches will be able to further develop their abilities in the following areas:

Risk assessment – analyze track and environmental conditions that may compromise safety
Match course design to the skill/age level of the participants
Increase knowledge of contemporary ski technology and the resulting impact on speed in Super G and Downhill events.
Understanding of the psychological factors that may affect participant performance in speed events
Understanding age and gender differences, specifically physical factors that may impact performance
Understanding of the concept of sequencing training in order to maximize skill acquisition

General Guidelines for Course Setting

- Risk Assessment – safety is the priority so familiarity with terrain and snow conditions of the piste and skill level and age of the participants is important. If possible, ski the piste approximating event speed and radius of types of turns.
- Complete knowledge of the event specifics – vertical drop and minimum/maximum number of gates (National/F.I.S. rules and regulations)
- Ensure all available equipment for setting is in working order (i.e. drills, batteries, gates, flags)
- Safety – set with spill zone and potential participant error in mind.
- Focus on looking downhill to try to visualize the course design.
- Look at what has been set for confirmation of rhythm and distances (vertical and horizontal)
- Course design should promote fluid movements and linking of turns.
- Course design should encourage participants to look for speed (challenge) rather than merely trying to survive.
- Set variety in training/set for success in competition.
- Start and finish with open rhythm
- Set gates vertical in snow.
- Set gates so they are easily seen by participants at race speed (avoid blind gates)
- Set above or below knolls and rolls.
- Set rhythm changes on terrain that is consistent with the skill level of the participants.
- Set according to rules and regulations of the discipline (National/F.I.S.)
- Verify the design of the course by skiing it and adjusting as required.
- Allow time for course inspection to promote mental training skills.

Training Courses (Preparation for Competition)

Skill development is systematic and predictable. Coaches who plan the training in sequence will yield better results. Sequential training allows the participants time to adapt to consecutive training stimuli. It is critical that the sequencing of the training be individually programmed, appropriate and specific to the participants' skill level and growth and development.

To that end, training course must be set in order to challenge and further enhance the participants' technical and tactical skills while working within the parameters of the participants' physical and psychological abilities.

The training sequence is best illustrated as follows:

Technical free skiing
Drill/short courses
Full length courses
Race simulation
Competition

In order to create an effective learning environment, the coach training methods must reflect what the participant will encounter in a competitive environment. The following guidelines will help prepare participants for competition with a well planned training program.

Setting with variety

- Rhythm (open/closed gates) to rhythm changes (combinations)
- Varying vertical distances
- Varying horizontal distances
- Fall line set/off fall line
- Varying the terrain
- Different snow conditions (hard packed, soft packed, powder)
- Changing speeds
- Promote linking from turn to turn

Race Simulation

- Variety of setting types
- Full courses (outside poles)
- Flagged gates
- Timing/timed runs
- Start and finish area
- Start wand/finish beam
- Simulation of race terrain
- Set to event specific speed
- Race suits on participants
- Invite other competitors

SLALOM

Slalom requires the participants to demonstrate consistent balance, timing, coordination, agility and explosiveness. Slalom also requires the participant to focus on skiing the line as in Giant Slalom in order to take advantage of connecting the turns with minimum loss of speed.

It is incumbent on course setters to design safe challenging courses that permit the participants to exhibit all of the above characteristics according to their skill level.

Course setting demands consistency and precision in setting in order to permit the following to occur:

- Participants can take advantage of consistent track conditions
- Allow as many participants to finish as possible
- Allow participants to execute precision in their motor movements
- Eliminate erratic athletic movements due to erratic course design
- Generate a positive training effect
- Allows participants to look for speed by linking turns

General guidelines for Slalom setting;

- Consistent rhythm (consistent vertical/horizontal distances as terrain dictates) 11 – 13 m
- Rhythm change every 5 – 6 gates
- Three gate flush combinations
- Entry should be "over top" in combinations
- Exposure to delay, hairpins and flush combinations
- Drill type/short courses (12 – 15 gates)
- Stubby type gates for skill acquisition

Test Skill Level with the following variations:

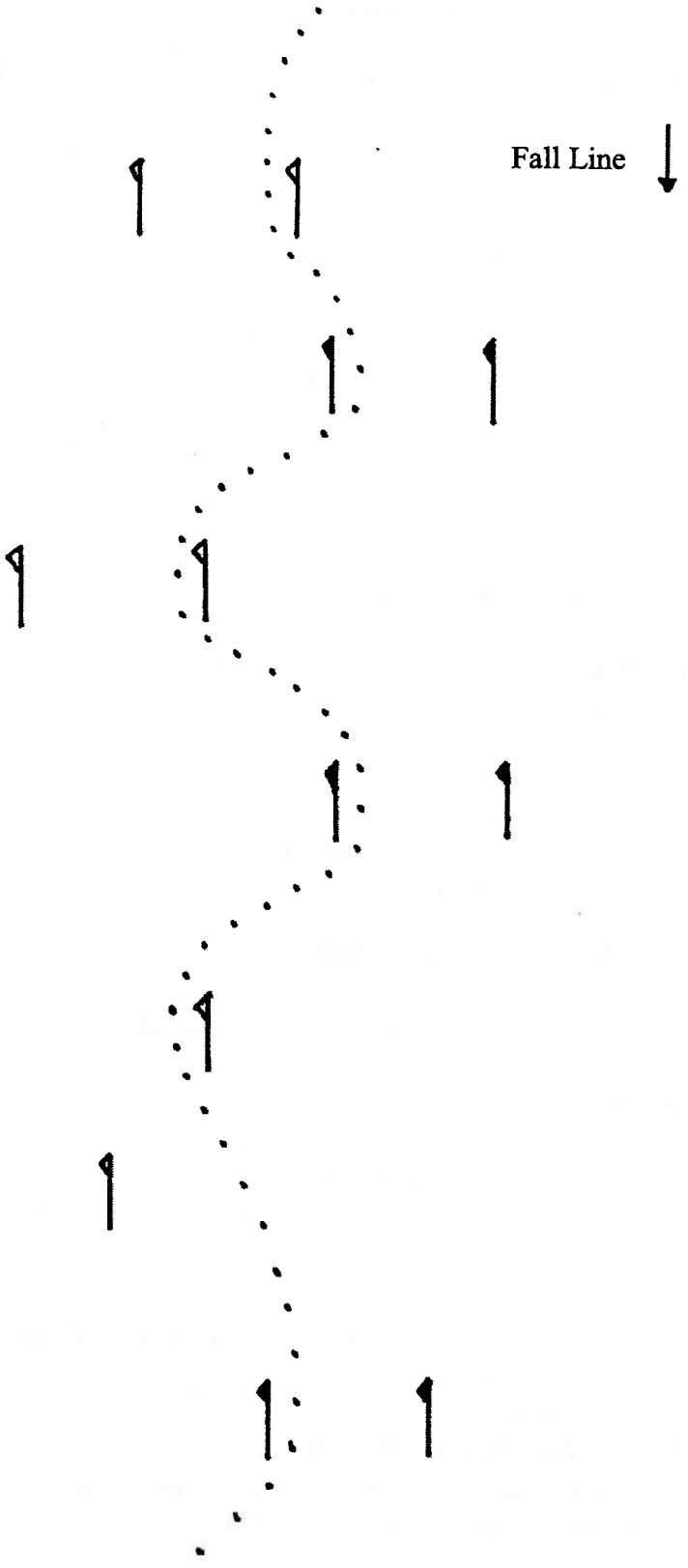
- Variety of combinations (delays, flushes, hairpins)
- Rhythm/rhythm changes more frequently
- Fall line and off fall line sets
- Changes in vertical and horizontal distances as terrain allows (vertical 10 – 13 m)
- Use variety of different types of gates (stubbies, flex gates
- More frequent rhythm changes (3 – 4 gates open rhythm then combination)
- More frequent off fall line sets
- More varied terrain (steep, rolling, side hill)
- Set variety in turn types(½ – ¾ turns to full) as terrain allows
- Set combinations more frequently
- Set 5 gate flushes occasionally
- More frequent full courses (race simulation)
- Set 3 – 4 drill courses (15 – 20 gates) with breaks in between to promote mental skills training
- Set more variety in vertical distances (10 – 13 m)

BASIC SLALOM-TYPES OF GATES AND DISTANCES

(meters = m)

OPEN GATE

(turning pole and outside pole are horizontal to each other)



The distance from turning pole to outside pole for both open and closed gates is 4-6 m

CLOSED GATE

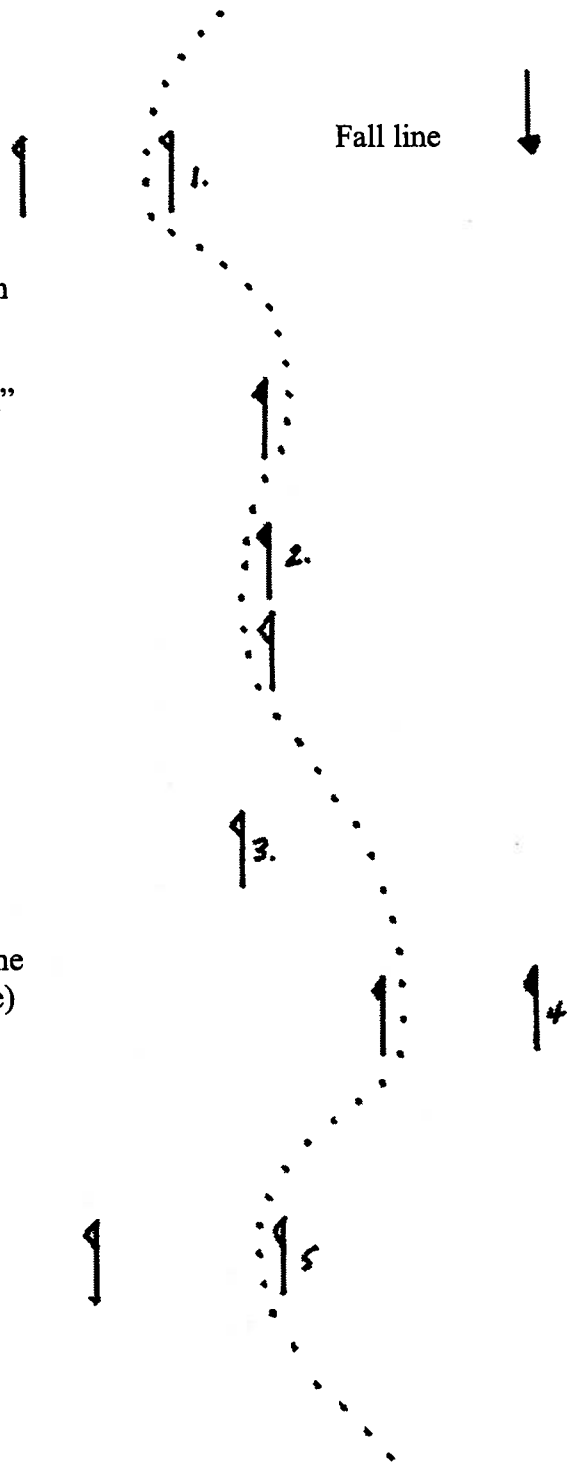
(turning pole and outside pole are vertical to each other)

Maximum distance between gates is ~~13m~~ 12m

HAIRPIN PATTERN

DEFINITION: Two closed gates set in succession and vertical to each other

FUNCTION:
- change of rhythm
- avoid poor snow conditions
- avoid obstacles



Vertical distance between poles is 4 – 6 m
(6 m recommended in hairpin pattern)

entrance into a hairpin should be "easy in"

exiting a hairpin should be "easy out"

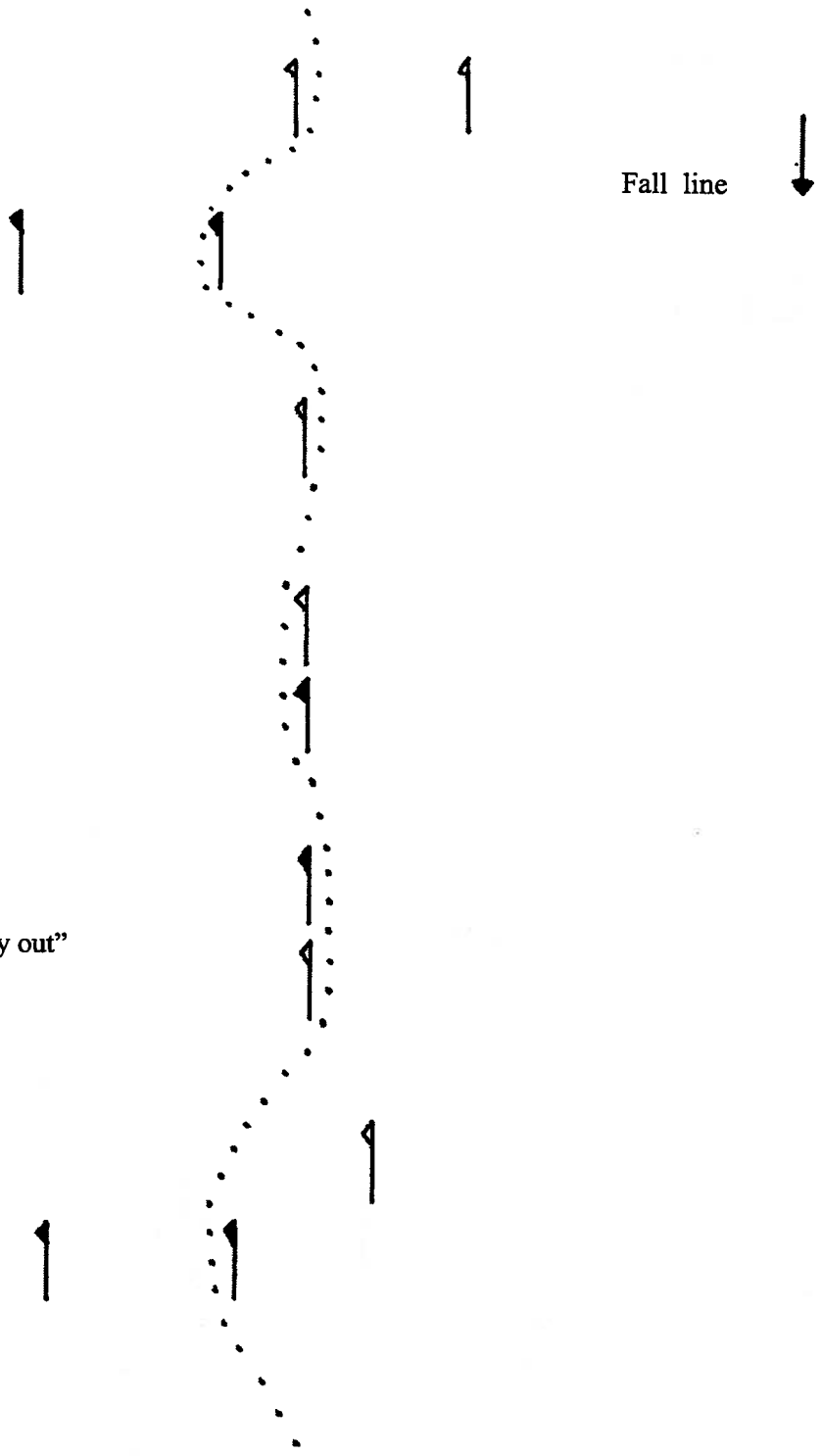
Minimum distance between gates is
.75 m (1 m is recommended)

Move bottom pole of gate 3 away from the direction of the turn (1 m off the fall line)

FLUSH PATTERN

DEFINITION: 3 – 4 closed gates in succession and vertical to each other

FUNCTION:
- change of rhythm
- challenge agility
- change of speed
- change turn radius



Entrance to flush
same as hairpin "easy in"

utilize 6 m vertical
distance between poles
same as in hairpin

minimum distance of 75 m
(1 m recommended)

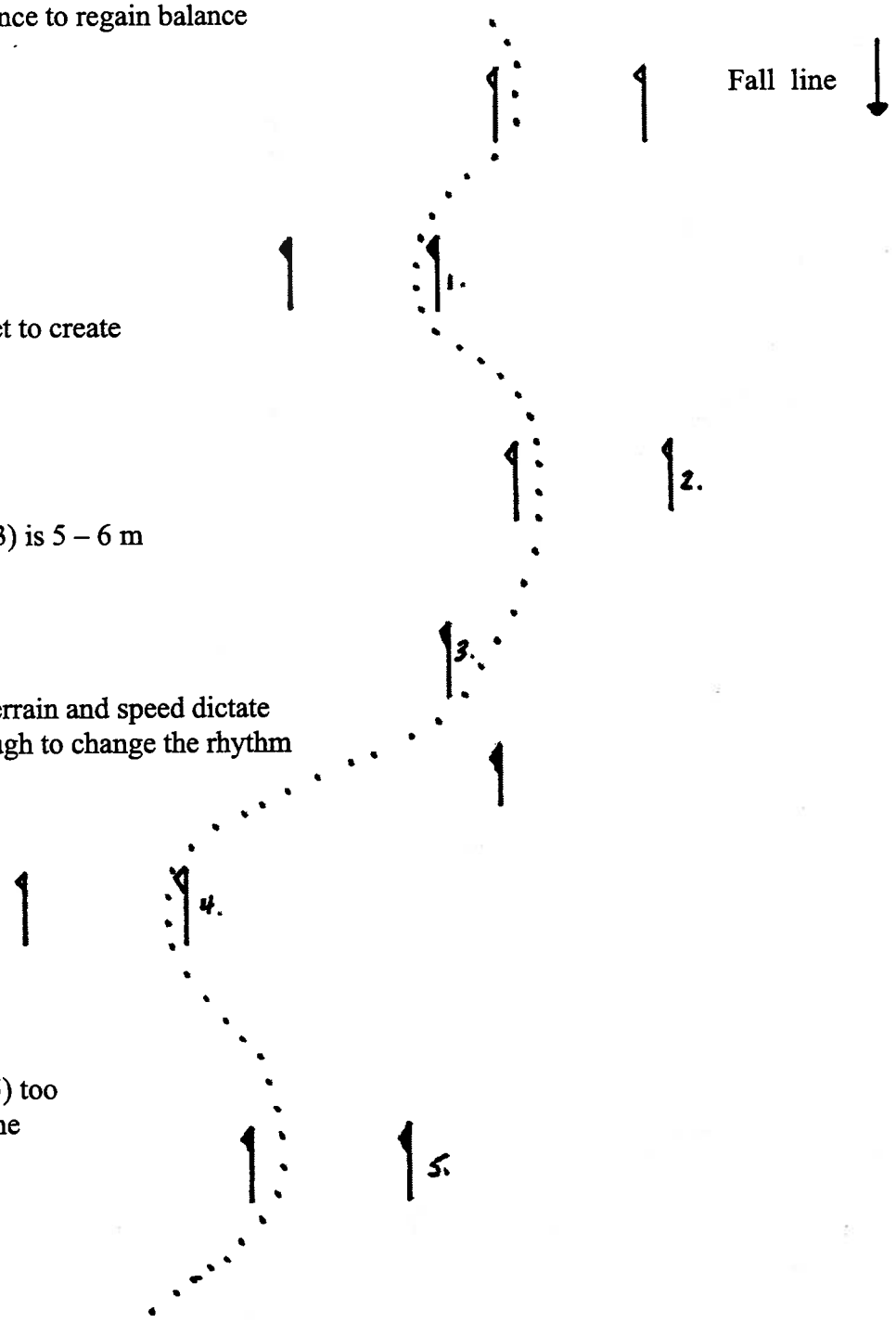
Exiting flush should be "easy out"

Set bottom pole away
from the direction of
the turn
(1 m off the fall line)

DELAY GATE PATTERN

DEFINITION: an open and closed gate set in succession and vertical to each other

FUNCTION:
- change of speed and rhythm
- move the line across the hill
- allow time and distance to regain balance



Gates (2) & (3) are set to create
one direction
change on an arc

vertical distance
between gate (2) & (3) is 5 – 6 m
(6 m recommended)

Gate(4) is offset as terrain and speed dictate
should be offset enough to change the rhythm

Avoid setting gate (5) too
far off the vertical line

BASIC SLALOM DESIGN

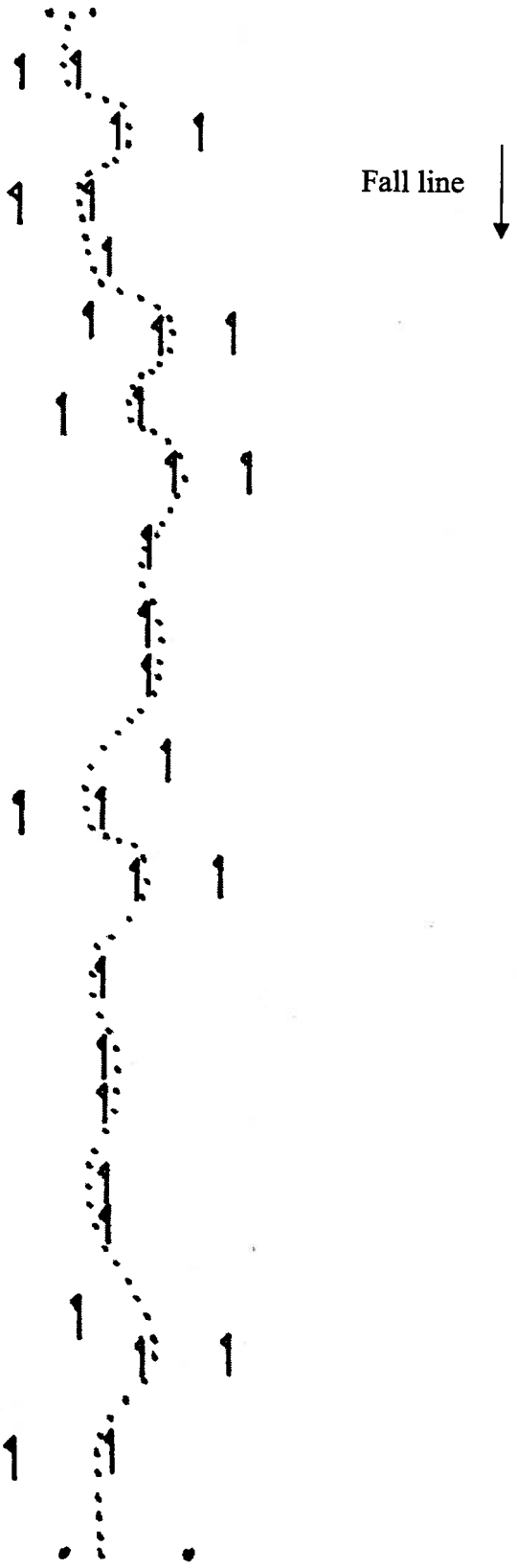
Fall line setting with rhythm changes

Set the first 2-3 gates to promote rhythm

Note:
1. maintain consistent vertical and horizontal distances for rhythm as the terrain dictates

2. use the hairpin, flush and delay combinations to change the rhythm of the course

Set last 2-3 gates to finish with rhythm



GIANT SLALOM

SAFETY is a priority in setting for all disciplines but as the speed of the event increases, so must the ability of the coach to assess the risk involved with increasing race speed. Giant Slalom requires more prudent assessment of terrain changes, width of the terrain, spill zones, and skill level of the participants in order to design courses that allow the participants to look for speed, yet is set so that terrain becomes a positive factor in speed control. The result should be courses that flow with the contours of the terrain and promote linked arcs with speed.

General guidelines for setting Giant Slalom:

Set to utilize the terrain
Use a variety of radii (dictated by the terrain)
Set so the turns are linked by arcs with speed
Control speed by creating arcs and using the terrain (rounder on steep terrain)
Set 3-4 gates (open) out of the start to promote balance, rhythm and speed
Entrance to delay combinations should be obvious
Adjust vertical distances in compressions and terrain changes
Set according to discipline rules and regulations (National and F.I.S)
Ensure all gates are visible especially in undulating terrain
Promote course inspection to train mental skills
Use vertical distances of 15 – 25 meters

Test Skill level with the following variations:

Set longer courses as rules and regulations permit
Use variety in vertical distances (minimum/maximum % of vertical drop)
Set to flat terrain to allow experimentation with tucking and tuck turns
Set delays on variety of terrain to allow experimentation with line
Set longer courses to promote specific training (race simulation)

BASIC GIANT SLALOM – TYPES OF GATES AND DISTANCES

(meters = m)

OPEN GATE

Turning panel and outside panel are horizontal to each other

Width of gate from turning panel to outside panel in both open and closed gates is 4 – 8 m

CLOSED GATE

Turning panel and outside panel are vertical to each other (panels may or may not be rolled to 45 cm)

Minimum distance between gates is 10 m

BASIC GIANT SLALOM DESIGN

Start to the first gate should allow time to balance and establish momentum

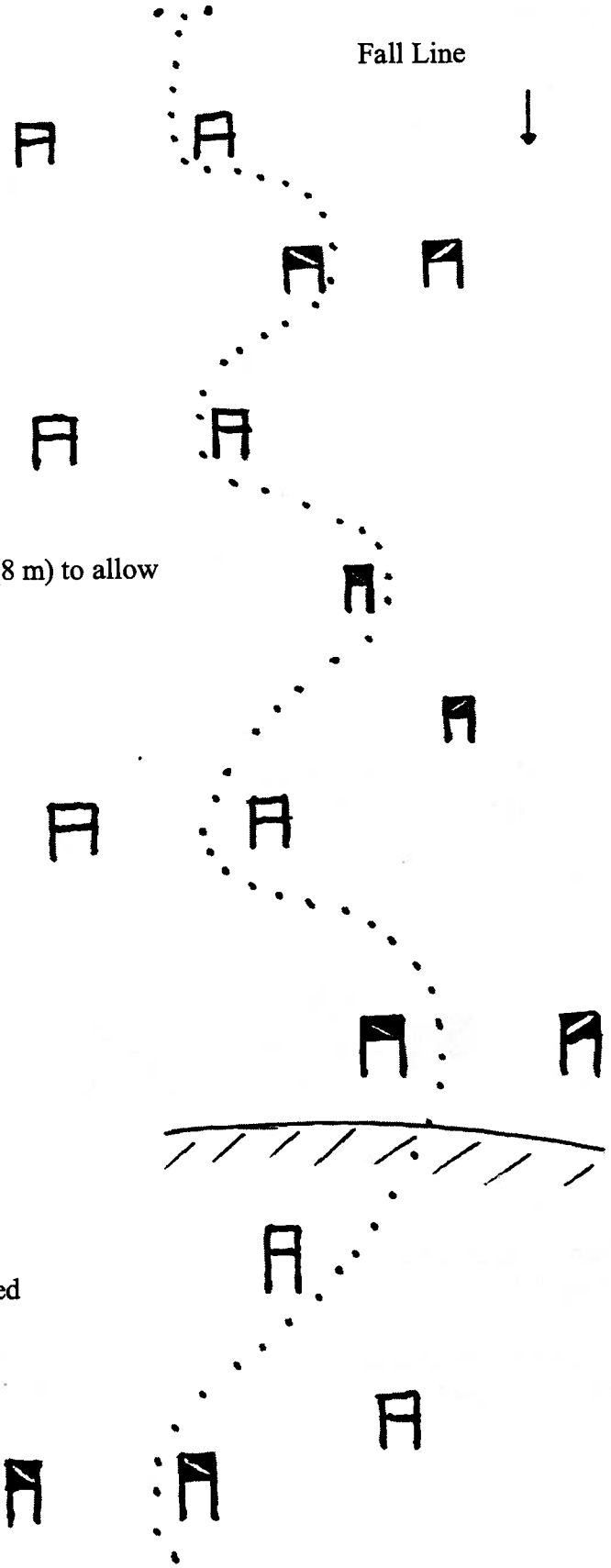
The first 3 – 5 gates should promote rhythm and speed build up

Closed gates should be set to maximum width (8 m) to allow for pilot error

Gates set below rolls and drop offs should be visible to participant

Set turning panel either above or below the apex of a knoll

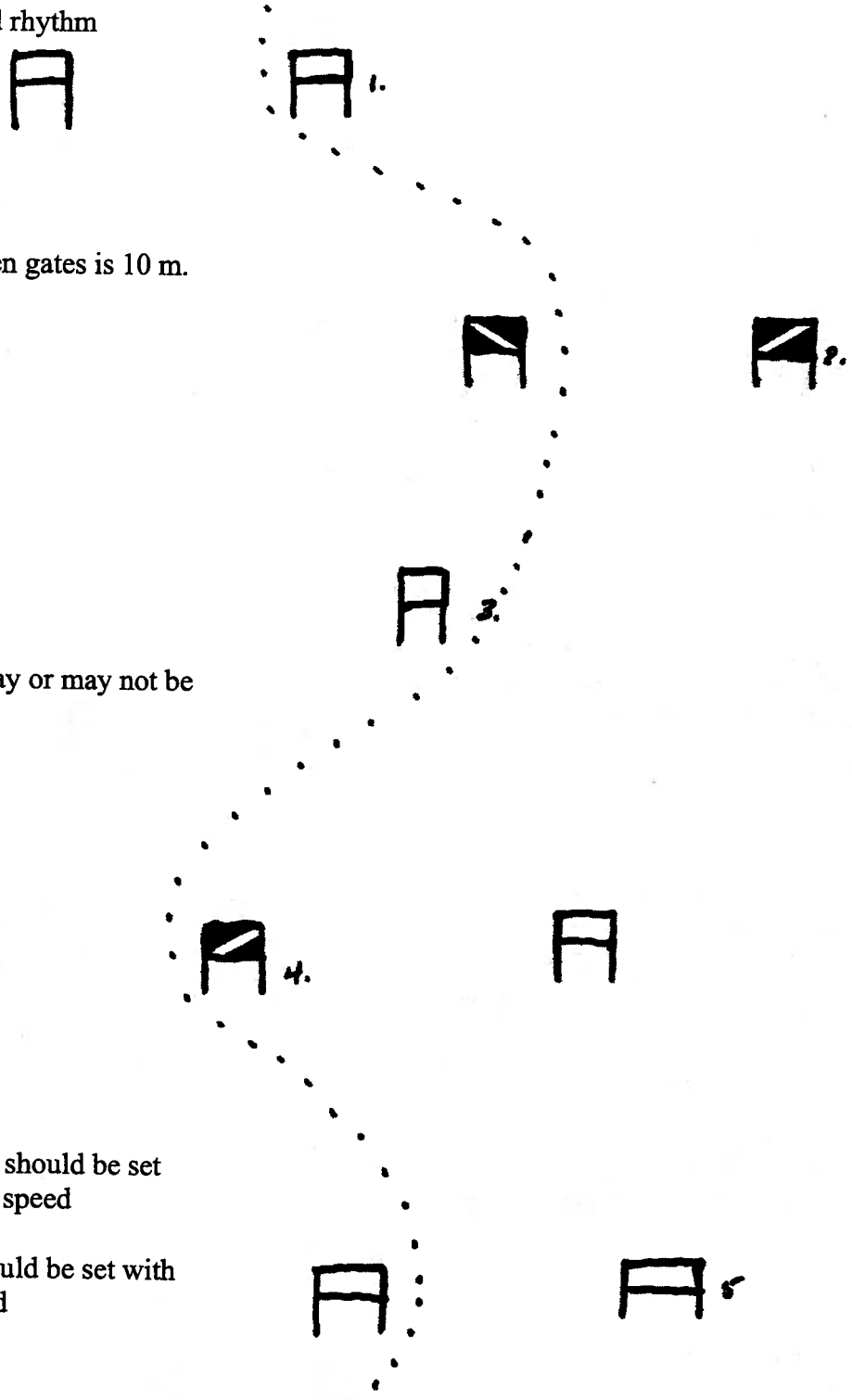
Note: Giant Slalom setting is dictated by the terrain – try to promote linking and speed



GIANT SLALOM DELAY CONFIGURATION

DEFINITION: open and closed gates set in succession and vertical to each other

FUNCTION:
change line, speed and rhythm



Minimum distance between gates is 10 m.

Closed panels, gate (3), may or may not be rolled to 45 cm

On steeper terrain, gate (4) should be set with more offset to control speed

On flat terrain, gate (4) should be set with less offset to promote speed

SUPER G

Super G is a synthesis of the technical and tactical aspects of Giant Slalom and Downhill. The challenge to the course setter is to utilize the terrain effectively in order to allow the participants to experiment with the line based on their skill level and experience with speed events.

Super G is an excellent transitional event that allows young participants a chance to transfer their skills from the technical events to downhill. Therefore, there are important priorities that the course setter must be aware of in order to maintain a safe learning environment. The terrain must satisfy the width and length specifications of downhill while the track must be as hard as it is for slalom. The transition into speed events must follow a sequence that helps the participants become psychologically prepared for speed while promoting development of the technical and tactical skills (strategies) required to achieve speed.

Guidelines for Setting Super G:

- Constant awareness of all safety concerns (spill zones, speed, direction changes, terrain changes, finish area, movement zones, etc.)
- Set with the psychological abilities (coping skills) of the participants in mind
- Set to promote speed on the flats and control on the steep terrain
- Set with physical and technical limitations of the participants in mind

Training Super G provides an opportunity for participants to engage in " air time". Setting for developing air time skills demands specific setting skills by the course setter. The following guidelines should be adhered to when setting for jumps in Super G and Downhill. The jumps must be:

Clearly visible on approach
Must have adequate direction and distance to the next set of panels
Allow the participants to remain as close to the snow surface as possible (1to2 feet)
Safe area for landing, no compressions or flats
Must have adequate spill zone in case of pilot error

Training and competition in speed events requires the utmost prudence on the part of the course setter. Speed courses must be set so that the participants are able to navigate the course without obvious compromise to their safety. Therefore, course setters must recognize that setting for speed requires knowledge in risk assessment and complete awareness of the skill and age level of the participants.

BASIC SUPER G - TYPES OF GATES AND DISTANCES

(meters = m)

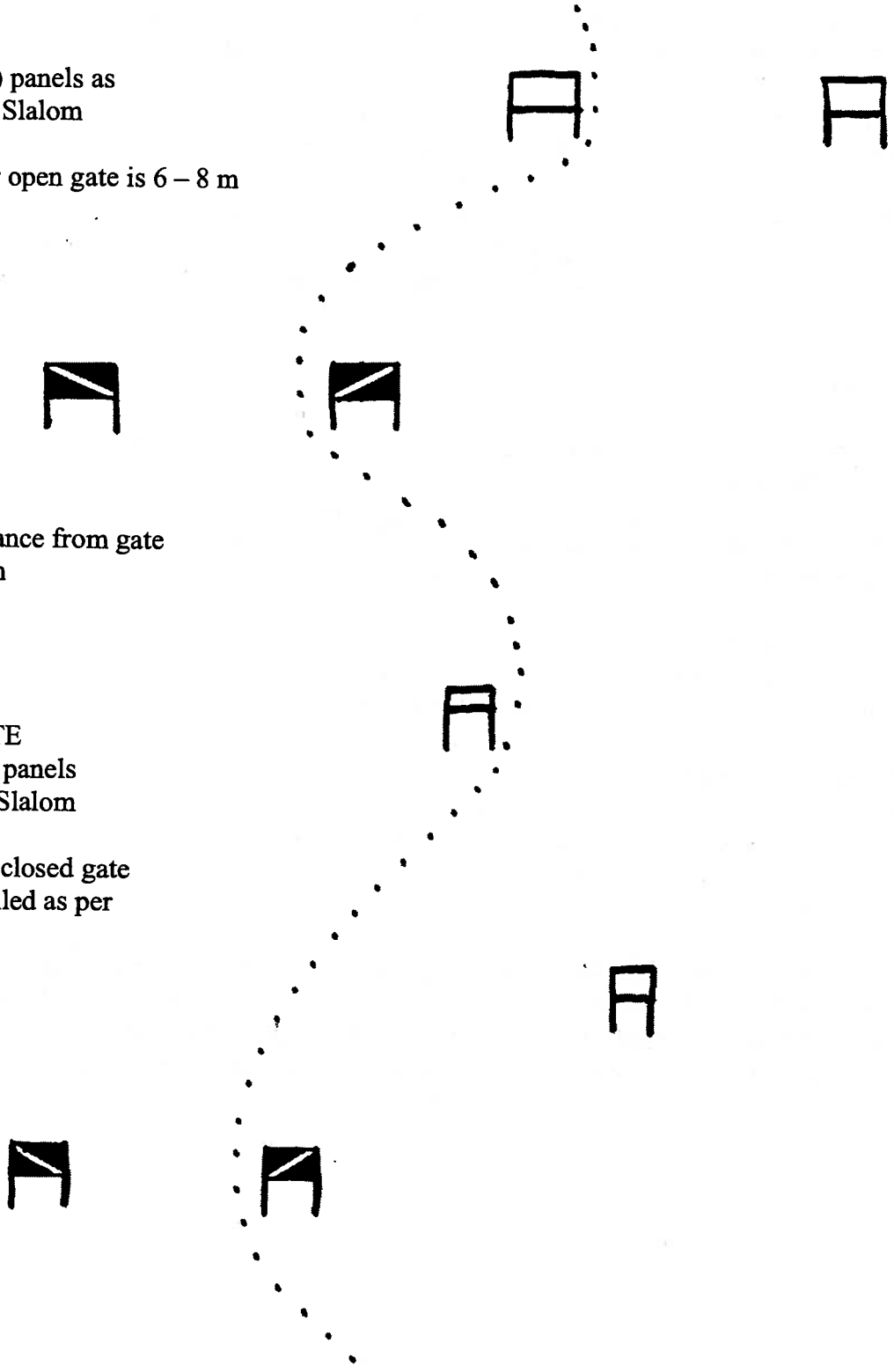
OPEN GATE
Consists of (2) panels as same as Giant Slalom

Gate width for open gate is 6 – 8 m

Minimum distance from gate to gate is: 25 m

CLOSED GATE
Consists of (2) panels same as Giant Slalom

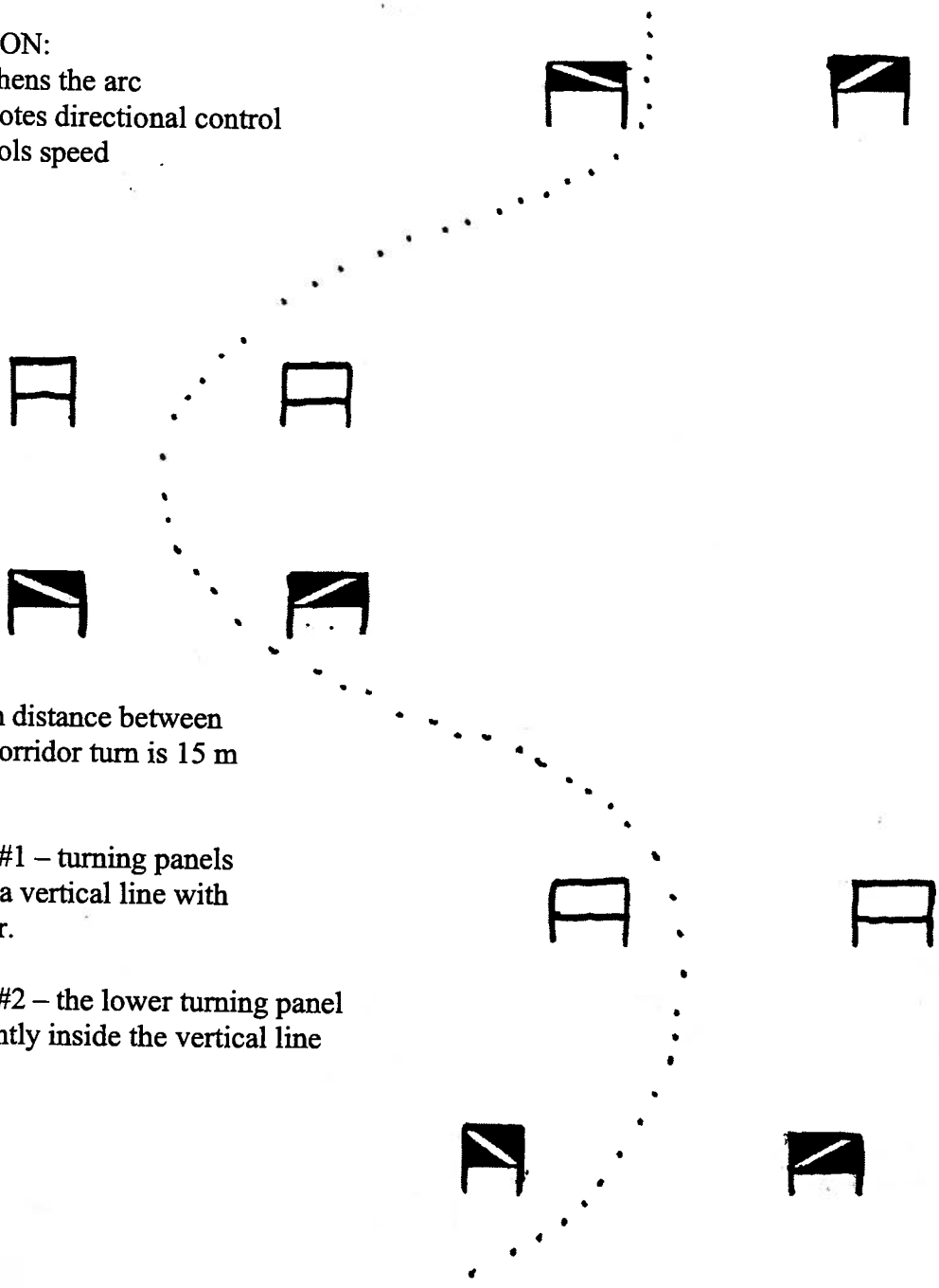
Gate width for closed gate is 8 – 12 m (rolled as per Giant slalom)



SUPER G - TURN VARIATION

Corridor turn – two open gates set in succession and vertical to each other

FUNCTION:
- lengthens the arc
- promotes directional control
- controls speed



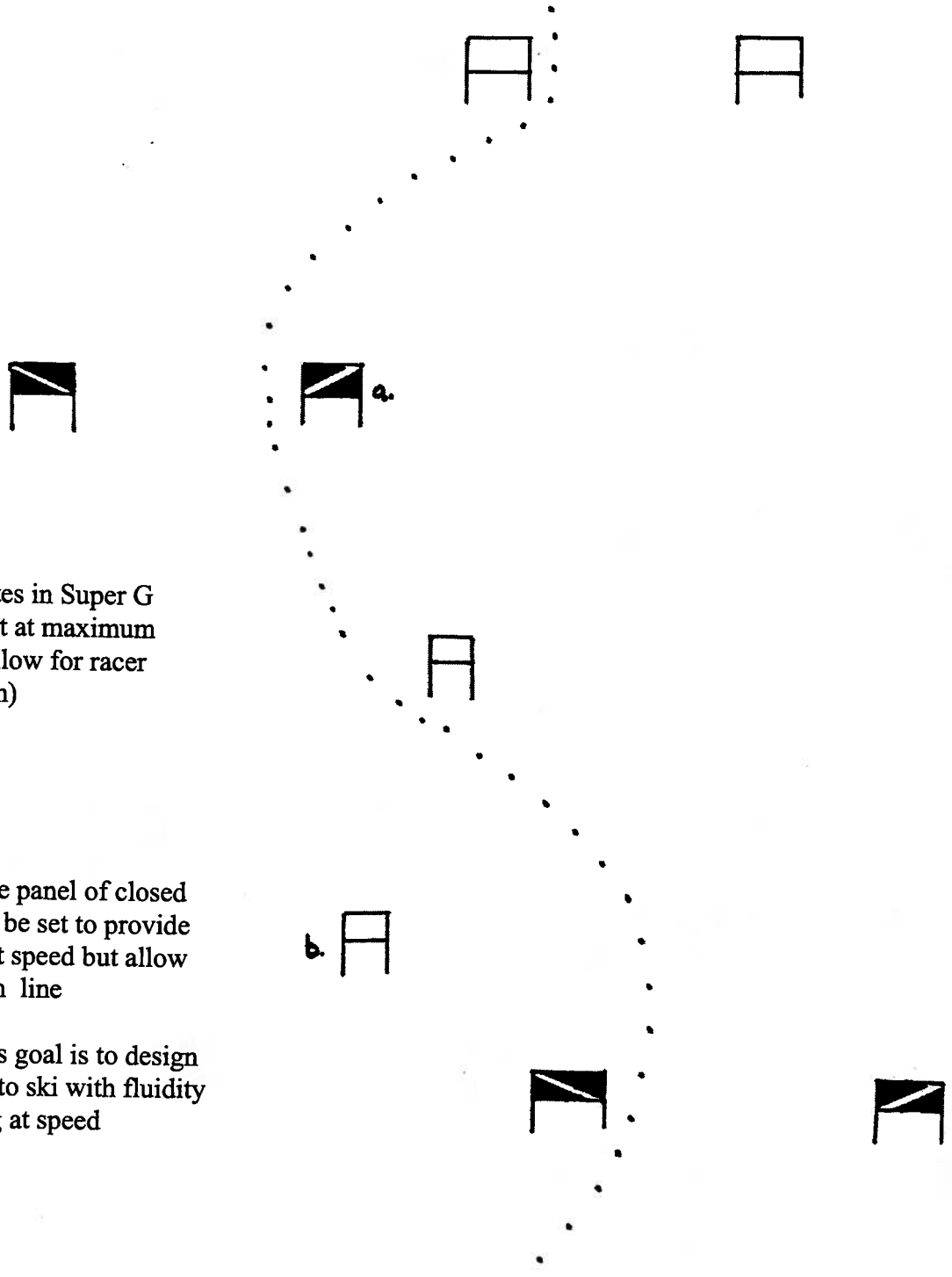
Minimum distance between gates in corridor turn is 15 m

Example #1 – turning panels are set in a vertical line with each other.

Example #2 – the lower turning panel is set slightly inside the vertical line

SUPER G DELAY

Delay gates in Super G must be set so that it is clearly visible at speed.



Closed gates in Super G must be set at maximum width to allow for racer error (12 m)

The outside panel of closed gates must be set to provide direction at speed but allow for error on line

The setter's goal is to design the course to ski with fluidity and linking at speed