



Alpine Course Setting Recommendations

The following are recommendations for coaches for course setting to maximize the development for athletes at different phases in training and in competition. These recommendations are designed around the science of child development, are complementary to new rules in course setting, and account for recent evolutions in equipment, course setting, and corresponding technique. There may be some variance from age class course setting rules due to the varying developmental phases for athletes of the same chronological age based on maturational differences, particularly in phases 3-5. In these cases, the age class rules apply to competition, but these recommendations are a good guideline for coaches in planning appropriate training. We encourage coaches to expose their racers to a variety of different courses and drills, to limit standing around, and to spend as much time as possible on the hill actually skiing. Current course setting rules can be found in chapter 8 of the USSA Competition Guide and in the FIS ICR.

Alpine Training System Developmental Phases:

| Foundation Stage | | Pre & Post Puberty | | | World Class Performance Full Maturation |
|--|---|--|---|---|---|
| PHASE 1 | PHASE 2 | PHASE 3 | PHASE 4 | PHASE 5 | PHASE 6 |
| Biological Age Pre Puberty Age 2-6 years old Play Age 1-4 years in sport Participation Ski around 1 day a week 20 days a year At least 95% free skiing Play many other sports - gymnastics or balance-based sports | Biological Age Pre Puberty Age 6-10 years old Training Age 1-4 years in sport Participation Ski 2-3 days a week 50 days a year At least 90% free skiing Fun races Play many other sports | Biological Age Pre Puberty (Before Growth Spurt) Age Girls: 10-13: J4 (J5-J3) Boys: 11-14: J4 (J4-J3) Training Age 4-8 years in sport Participation Ski 3-4 days a week 70 days/year At least 60% free skiing Competition Period: (Jan.-April) Number of race starts: 10-15 Ratio 1:6 (race:training) Play complementary sports | Biological Age Puberty (Growth Spurt) Age Girls: 11-14: J3 (J4-J3) Boys: 12-15: J3 (J4-J2) Training Age 5-9 years in sport Participation Ski 4-5 days a week 100 days/year At least 30-50% free-skiing Competition Period: (Dec.-April) Number of race starts: 15-30 Ratio 1:5 (race:training) Play complementary sports | Biological Age Post Puberty (After Growth Spurt) Age Girls: 12-16: J3 (J4-J2) Boys: 14-17: J2 (J3-J1) Training Age 6-11 years in sport Participation Ski 4-5 days a week 120-140 days/year At least 15% free skiing Competition Period: (Nov.-April) Number of race starts: 25-max 45 Ratio 1:4 (race:training) Play complementary sport | Biological Age Full Maturation Age Female: 16+ J2-J1 Male: 17+ J1 Training Age Minimum 10+ years in sport Participation Ski 4-5 days a week 130-150* days/year At least 10% free-skiing Competition Period: (Nov.-April) Number of race starts: 55* Ratio 1:3 (race:training) *based on the number of disciplines |

PHASE 1

Skiers start following a designated line by skiing around cones, playing follow-the-leader, and exploring the mountain. Racing introduction via NASTAR or obstacle courses.

PHASE 2

Background:

Skiers in this phase are moving into the optimal window for them to acquire and hone fundamental skiing skills. They are also in an optimal window to develop agility and quickness, and very short duration speed (5 seconds or less). They also have relatively short attention spans and do not have a well-developed anaerobic energy system for sustained high-intensity skiing over a long course. Skiers in this phase are encouraged to use one pair of skis for all events. Recommended disciplines include giant slalom, slalom, Kombi, dual courses, obstacle courses, and skills competition.

SLALOM:

Training

- Progress from brushes to stubbies. Use of junior flex poles (shorter shaft, 25-27mm diameter, light-weight hinge) once skiers are ready to practice clearing. Gate clearing is an important skill for athletes to work on, particularly in the second half of this phase. Angling the junior flex poles slightly to the outside of the turn can help alleviate issues with athletes reaching across with their hands to clear. Set a stubbie or brush course alongside the junior gate course so that coaches can move skiers back and forth depending on their ability to maintain proper body position.
- Frequently set very quick short drill courses to develop quickness, distances from 2-6m
- Typical characteristics – minimal combinations, recommended distance between gates in combinations 4-5m, recommended distance between open gates 6-9m
 - Always set outside gate of hairpin/flush and delay gate in training
- Rather than setting one 30-40 gate training course, split the hill in 2 or 3 shorter courses (10-15 gates) and emphasize focus for each section on a specific technical task
 - Set a start and finish gate for each section so athletes always practice a strong start and skiing through the finish

Competition

- Maximum distance between turning gates: 9m
- Normal distance between turning gates: 7-9m
- Normal distance between poles in combinations: 4-5m
- Changes in rhythm requiring different turn shapes, but not tactically challenging
- Recommend 20-30 changes
- Dual format is encouraged to get more runs (independent timing on each course)

GIANT SLALOM:

Training

- Use brushes, stubbies, and paneled gates.
- Recommend distances of 15-22m between gates.
- Always set outside gate of delay gate in training

- Rather than setting one 20-30 gate training course, split the hill in 2 or 3 shorter courses (around 10 gates) and emphasize focus for each section on a specific technical task
 - Set a start and finish gate for each section so athletes always practice a strong start and skiing through the finish

Competition

- Maximum distance between turning gates: 22m
- Normal distance between turning gates: 17-20m
- Changes in rhythm requiring different turn shapes, but not tactically challenging
- Recommend 15-20 direction changes
- Dual format is encouraged to get more runs (independent timing on each course)

KOMBI:

Training

- Use brushes, stubbies, and paneled gates
- Recommended distances between gates for SL sections: 6-10m, for GS sections: 12-20m
- Combinations for SL may be set, but should be with single pole, 4-6m distance
- Course should use the entire slope, working across the fall line as often as possible
- Course should be set such that a smooth transition between GS and SL sections is possible
- Course should include at least one jump

Competition

- Same as for training
- Recommend around 5 different sections and around 30 turns

PHASE 3

Background:

Skiers are in the optimal window for them to hone their fundamental skiing skills. This may be the most important developmental phase of a ski racer. To take maximum advantage of this opportunity, course setting should progressively challenge the skier's technique. Variety is essential. For motor learning to take place, skiers must first demonstrate they can perform the skill, then continue to execute it as the task gets more difficult. Training course progressions can go from rhythmic to a-rhythmic, flat to steep, or open to tight or vice versa. Kombi is a good event for this phase because it requires versatility and a variety of turn shapes. The skiers still do not have a well-developed anaerobic energy system for sustained high-intensity skiing over a long course. Recommended disciplines include giant slalom, slalom, Kombi, dual courses, obstacle courses, skills competition, and an introduction to speed and terrain elements, including children's super G.

SLALOM:

Training

- Progress from brushes to stubbies. Use of junior flex poles (shorter shaft, 25-27mm diameter, light-weight hinge). Gate clearing habits learned here will stay with these skiers for some time. Coaches must demand proper clearing and using age-appropriate gates can help phase 3 skiers clear correctly (think of the smaller ball for youth soccer or lower hoop for youth basketball). Set a stubbie or brush course alongside the junior gate course so that coaches can move skiers back and forth depending on their ability to maintain proper body position.
- Typical characteristics –recommended distance between gates in combinations 4-5.5m, recommended distance between open gates 6-10m
 - Always set outside gate of hairpin/flush and delay gate in training
- Rather than setting one 30-40 gate training course, split the hill in 2 or 3 shorter courses (10-15 gates) and emphasize focus for each section on a specific technical task
 - Set a start and finish gate for each section so athletes always practice a strong start and skiing through the finish

Competition

- Maximum distance between turning gates: 9-10m
- Normal distance between turning gates: 7-9m
- Normal distance between poles in combinations: 4-5.5m
- Changes in rhythm requiring different turn shapes, but not tactically challenging
- Recommend 25-35 direction changes
- Dual format is encouraged for race efficiency (independent timing systems)

GIANT SLALOM:

Training

- Use brushes, stubbies, and paneled gates
- Recommend distances of 17-24m between gates
- Always set outside gate of delay gate in training
- Maximize variety, in a progressive manner (start easy and increase challenge using slope, offset, vertical distances, rhythm variability)
- Rather than setting one 20-30 gate training course, split the hill in 2 or 3 shorter courses (around 10 gates) and emphasize focus for each section on a specific technical task
 - Set a start and finish gate for each section so athletes always practice a strong start and skiing through the finish

Competition

- Maximum distance between turning gates: 22-24m
- Normal distance between turning gates: 18-22m
- Changes in rhythm requiring different turn shapes, but not tactically challenging
- Recommend 15-25 direction changes
- Dual format is encouraged for race efficiency (independent timing systems)

KOMBI:

Training

- Use brushes, stubbies, and paneled gates
- Use both GS/SL Kombi and GS/SG Kombi
- For GS/SL Kombi, recommended distances between gates for SL sections: 6-10m, for GS sections: 12-20m
- For GS/SG Kombi, recommended distances between gates for GS sections: 12-20m, for SG sections: 18-28m
- Course should use the entire slope, working across the fall line as often as possible
- Course should be set such that a smooth transition between sections is possible
- Course should include at least one jump

Competition

- Same as for training
- GS/SL Kombi contains 5-6 different sections with around 30-35 turns
- GS/SG Kombi contains 3-5 different sections with around 20 turns

SUPER G:

Training

- Emphasis is on elements training – jumping and gliding skills
- Course setting should be appropriate for skiers on GS skis
- Recommended distances between turns range from 22-32m

Competition

- Set on moderate terrain
- Distance between turns from 22-35m, use full spectrum, but make sure course maintains rhythm and flow
- Sets are generally basic and control the skier's speed, no abrupt turns or terrain at speed
- Jumps, if included, should go with flow of course and direction of turns, skier should easily be able to attain a balanced position at the lip of the jump. Jumps have appropriate landings, and are generally on the upper part of the course.

PHASE 4

Background:

Skiers in this phase are into their growth spurt. For many skiers, the challenge will be to maintain their technical skills through this phase. Gate training becomes a greater percentage of training time. Course setting should begin to challenge the skiers' tactics to a greater degree through more substantial rhythm changes. Variety is still very important. While skiers in this phase can make great gains in stamina, they still do not have a well-developed anaerobic energy system, so a mix of short and long courses can be used. Recommended disciplines include giant slalom, slalom, super G, duals, and terrain and jumping elements. Skills

competitions help skiers in this phase stay focused on maintaining their fundamentals from the earlier phases.

SLALOM:

Training

- 27mm diameter, full-length gates are appropriate, though brushes and stubbies are still used frequently.
- Typical characteristics –recommended distance between gates in combinations 4-6m, recommended distance between open gates 7-11m
 - Set the full spectrum of these distances
 - Always set outside gate of hairpin/flush and delay gate in training
- Rather than setting one 30-40 gate training course, split the hill into shorter courses frequently and emphasize focus for each section on a specific technical task
 - Set a start and finish gate for each section so athletes always practice a strong start and skiing through the finish

Competition

- Maximum distance between turning gates: 10m
- Normal distance between turning gates: 7.5-10m
- Normal distance between poles in combinations: 4.5-5.5m
- Changes in rhythm requiring different turn shapes
- Recommend 30-40 direction changes

GIANT SLALOM:

Training

- Recommend distances of 18-27m between gates
 - Set the full spectrum of these distances
- Always set outside gate of delay gate in training
- Maximize variety, in a progressive manner (start easy and increase challenge - slope, offset, vertical distances, rhythm variability)
- Rather than setting one 20-30 gate training course, split the hill in shorter courses and emphasize focus for each section on a specific technical task
 - Set a start and finish gate for each section so athletes always practice a strong start and skiing through the finish

Competition

- Maximum distance between turning gates: 27m
- Normal distance between turning gates: 21-25m
- Changes in rhythm requiring different turn shapes
- Recommend 20-30 direction changes

SUPER G:

Training

- Emphasis is on elements training – jumping and gliding skills
- Recommended distances between turns range from 25-40m

Competition

- Set on moderate terrain
- Distance between turns from 25-40m, use full spectrum, but make sure course maintains rhythm and flow
- Sets are generally basic and control the skier's speed, no abrupt turns
- Terrain or jumps, when incorporated, should work with the flow of the hill and course, with skiers having room to approach from a balanced position without ski loading

PHASE 5

Background:

Skiers in this phase are starting to grow into their new bodies after the growth spurt, with the benefit of increased stamina. Strength gains can be quite rapid in this phase, and skiers can be expected to generate more power through their turns throughout the course. The anaerobic system starts to become developed, allowing skiers to ski with greater intensity from start to finish. As a result, course setting in this phase should start to mirror that at the elite levels, as skiers begin to manage higher speeds and more difficult terrain.

SLALOM:

Training

- 27-31mm diameter, full-length gates are appropriate, though brushes and stubbies may still be used.
- Typical characteristics –recommended distance between gates in combinations 4-6m, recommended distance between open gates 7-12m
 - Set the full spectrum of these distances
- Pairing of combinations is practiced, with hairpins into flush, delay into hairpins, etc.
- More challenging tactical situations

Competition

- Maximum distance between turning gates: 12m
- Normal distance between turning gates: 8.5-10.5m
- Normal distance between poles in combinations: 4.5-6m
- More challenging tactical situations
- Recommend 40-60 direction changes

GIANT SLALOM:

Training

- Recommend distances of 20-30m between gates
 - Set the full spectrum of these distances
- Maximize variety
- Incorporate terrain

Competition

- Maximum distance between turning gates: 30m
- Normal distance between turning gates: 24-27m
- Changes in rhythm requiring different turn shapes
- Recommend 30-40 direction changes

SUPER G:

Training

- Sections and full-length courses
- Emphasis on gliding and terrain elements, use of timing
- Inspection skills rehearsed in training
- Set full spectrum, some sets more downhill oriented, some more GS oriented
- Courses incorporate more terrain, though sets are kept basic through difficult terrain
- Course setting with existing or available safety installations in mind, appropriate fencing is in place before training begins

Competition

- Setting within rules of FIS or USSA, encourage full spectrum
- Courses incorporate terrain, but sets are kept basic through difficult terrain
- Course setting with existing or available safety installations in mind, course setter assists with fencing installations when needed

DOWNHILL:

Training

- Sections and shorter full-length courses
- Emphasis on gliding and terrain elements, use of timing
- Inspection skills rehearsed in training
- Jumping progressions – course set should control speed above the jump, athlete has time to be in balanced position for jump takeoff
- Overly difficult tactical/technical elements and large jumps are avoided, particularly on the lower part of the course
- Course setting with existing or available safety installations in mind, appropriate fencing is in place before training begins
- Setting done by or with the assistance of an experienced speed event course setter

Competition

- Overly difficult tactical/technical elements and large jumps are avoided, particularly on the lower part of the course
- Course setting with existing or available safety installations in mind, setter assists with fencing setup as needed
- Setting done by or with the assistance of an experienced speed event course setter

PHASE 6

Background:

Skiers in this phase are moving into mastery of all aspects of the sport. Some will begin to specialize toward certain disciplines, though a well-rounded training approach is still encouraged. Course setting should test and challenge all the skills the skiers possess. Course setting will mirror that on the NorAm, Europa Cup, and World Cup levels.

SLALOM:

Training

- 27-31mm diameter, full-length gates are appropriate, though brushes and stubbies may still be used
- Typical characteristics –recommended distance between gates in combinations 4-6m, recommended distance between open gates 7-12m
 - Set the full spectrum of these distances
- Pairing of combinations is practiced, with hairpins into flush, delay into hairpins, etc.
- Challenging tactically

Competition

- Maximum distance between turning gates: 12m
- Normal distance between turning gates: 8.5-11m
- Normal distance between poles in combinations: 4.5-6m
- Corridors of equal spacing and offset are not used, rhythm changes regularly, but course setter varies distance and offset to maintain flow
- Set within FIS or USSA rules as applicable

GIANT SLALOM:

Training

- Recommend distances of 20-30m between gates
 - Set the full spectrum of these distances
- Maximize variety, challenging tactically
- Use all available terrain, setting over abrupt terrain such that sometimes the knoll will be in the turn transition, and sometimes in the middle of the turn

Competition

- Maximum distance between turning gates: 30m
- Normal distance between turning gates: 24-27m
- Changes in rhythm requiring different turn shapes including chicanes
- Use all available terrain
- Set within FIS or USSA rules as applicable

SUPER G:

Training

- Sections and full-length courses
- Set full spectrum, some sets more downhill oriented, some more GS oriented
- Courses incorporate lots of terrain
- Course setting with existing or available safety installations in mind, appropriate fencing is in place before training begins

Competition

- Setting within rules of FIS or USSA, encourage full spectrum
- Courses incorporate terrain
- Course setting with existing or available safety installations in mind, course setter assists with fencing installations when needed
- Courses set by experienced speed event course setters familiar with the hill

DOWNHILL:

Training

- Sections and full-length courses
- Jumps may be present at any part of the course
- Course setting with existing or available safety installations in mind, appropriate fencing is in place before training begins
- Setting done by or with the assistance of an experienced speed event course setter

Competition

- Course setting with existing or available safety installations in mind, setter assists with fencing setup as needed
- Setting done by or with the assistance of an experienced speed event course setter