Guidelines for Trail-orienteering controls.

Edition 2006

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Original in Swedish and this is an unofficial translation for general information purposes

Validity: These guidelines shall be used at all national Trail-Orienteering's competitions from 11 February 2006 until revised guidelines are published.

Normally, the guidelines are reviewed every year at the technical conference.

During 2006, appointed assessors shall review every national Trail-orienteering competition using a specific checklist.

For information about and remarks on these guidelines you are welcome to contact

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The Swedish Orienteering Federation's, Trail-O Group

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1. General

1.1. The Map

The map shall at the control points and in their near vicinity have good quality and good correlation with the terrain. This is especially important in the near vicinity of controls and at "secure" points, which could be used for the decision of directions and distances. With "secure" points is meant e.g. boulders, paths, watercourses/ditches and different crossings and junctions.

If the quality and correlation is not good, either the map has to be adjusted or the control not to chosen. It is very important that the planner and the controller take this into consideration.

For example, if the contouring strictly follows height especially for maps with an equidistance of 5 meters, intermediate contours should be added in order to better reflect the shape of the terrain.

The exact centre of the control circle and the control description shall correspond. For features, that are correct in scale on the map, the control circle shall be located on that part of the feature that is defined by the control description. For features that are not in scale on the map the control circle shall be placed at the centre of the feature.

In cases when the centre of the control circle and the control description do not correspond the control description shall have preference. If the lack of correspondence obviously can lead to misunderstanding, the control shall be regarded as not following the rules.

When increasing the scale of the map the aim should be to change the symbol sizes to be 200% compared to the map guideline for 1:15,000 scale. Deviations from that shall be stated in the pre-race information.

In order to facilitate, the distance between the magnetic north lines shall be doubled, which means 125 meters at a map with the scale 1:5000. The magnetic north lines do not need to be parallel with the side of the map.

The control circles shall be 6-8 mm. If deviations are made, e.g. smaller control circles can be used when the controls are very close (but should not be smaller than 4 mm) there shall be a notice in the pre-race information.

On the map, the scale, the equidistance and a north direction arrow shall be shown.

1.2. More than one contour line on the same height-feature

If a height-feature has, for example, two or more contour lines within the control circle the whole feature should be regarded as the control provided there is no specification in the control description. If the highest part can be distinguished in the terrain and only that part is regarded as the control feature, the control description should be amended "upper part".

A re-entrant should be regarded in the same way. If the re-entrant has more than one contour line in the circle, the whole re-entrant shall normally be regarded as the control feature. If it is possible to distinguish, by a clear difference in height in the terrain, between parts, e.g. a

lower re-entrant and if only that one should be regarded as the control feature the definition shall be “lower re-entrant”.

A spur and a terrace should be regarded in the same way as a re-entrant.

1.3. Start point

The start point shall be shown on the map by a triangle. In the terrain it shall be marked with a control marker (reflex at night courses) and a sign with “Start point”, unless otherwise indicated in the pre-race information.

1.4. The placement of the viewing point stake

On the path, road etc a viewing point stake, of size and height sufficient to be easily seen, shall be placed in a suitable position near the control. If necessary a direction arrow in square “H” shall show the direction from the viewing point to the control. Placement of the viewing point stake on a slope should be avoided in the interests of wheel-chair users.

For controls with only one control marker there is no need of a viewing point stake for the E-course. That shall be notified in the pre-race information.

The route of the course should be chosen such that the paths and roads used have good accessibility for all competitors. If for example the paths are narrow and difficult to turn around on or if they are bumpy, soft and muddy then the organizers shall add extra time to the maximum time. This shall be written in the pre-race information.

1.5. Visibility of the control

The control point normally shall have good visibility. Exemptions from that can in some special cases be permitted, for example for “zero controls” at an E-course, if it is possible in a secure way, e.g. via direction or distance from “secure” point to decide that the control markers are false.

Special attention shall be paid when choosing control points that they are equally valid for wheel-chair competitors as for walking competitors. That is essential for the visibility of the control-point, position of the control markers, reference-points etc as well as good conditions for wheel-chairs. When judging the possibilities for wheel-chair competitors to have good access the surface conditions and width of path and possibility to turn around shall be considered. It is also important to check that the visibility from other places, where the problem can be solved from (decision point), as well as from the viewing point, is good.

In special cases, in A-class, exceptions from the requirements that the control-point shall have good visibility may be allowed. For example a pit can be difficult to see. However a pit which is difficult to see may be used as a control point but then only <u>one</u> control marker can be placed at the pit and it must be possible to solve the problem by direction from secure points or from other features in the neighborhood of the pit. This exemption is not permitted on an E-course as the feature must be visible to confirm that it not a zero-answer control.

1.6. Selection of control features

The controls shall be selected in such a way that they are as much as possible are similar to those in foot orienteering.

In addition most of the control points should be “orienteering control objects” which means that the problem is to select the right feature amongst other similar features, for example the right boulder from several boulders.

The number of “direction controls”, which means those where more than one or all control markers are placed on the same feature (one not in scale on the map, e.g. a boulder) should be limited.

For controls with only one control marker but with several control definitions only point features shall be used.

When choosing control points it should be avoided to have too many with the same control descriptions in the E-class and A-class, similarly in the A-class and B-class. However, the same control points can be used but with different control descriptions.

If a two day event is arranged in the same area the same control points (control description and position of control markers) shall not be used in E-class and/or A-class, similarly B-class the second day.

When choosing control points for night competitions this must be made with special attention. The control markers, reflexes, are normally not difficult to see. Normally they are more visible than the markers on day competitions. BUT the control feature and the terrain in the vicinity of the control is much more difficult to see than in day light. Thus, the planner and the controller must choose features which are “clear” and are not situated to far from the viewing point stake or other places at the path/road from where it is possible to solve the problem.

Especially difficult at night courses is to read the contours. That’s why special attention must be paid to control features as height, spur, terrace, re-entrant etc.

The planer and the controller must do several checks of the controls in darkness similar to the competition conditions. The best planning is to make the first inspection of the competition terrain in darkness in order not to have the impression of the control features and terrain in the vicinity from day light conditions.

1.7. Clear positions of control markers

The positions of the control markers must be “clear”. When vertical control features are used the correct control flag shall always be placed so that it is close to or touches the vertical feature. The word “clear” will be used often in the text below. Examples of the requirements for “clear” can be:

Example 1. **The position of control markers at a rock face.** If the control description is “rock face”, then the correct control marker shall be placed at the foot of the rock face and at the middle of the rock face. The positions of the alternative control markers are dependent on how exact it is possible to define the middle of the rock face, which is dependent on how exact it is possible to define where the rock face “starts” and where it “ends”. Often it can be difficult to define where a rock face start and ends. Sometimes it just fades out. In cases like that a larger distance must be used between the correct control marker and the alternative control markers compared to situations when the rock face’s length is well defined. But if there are other objects which can be of help for defining the length of the rock face the distance between the control markers can, of course, be shorter.

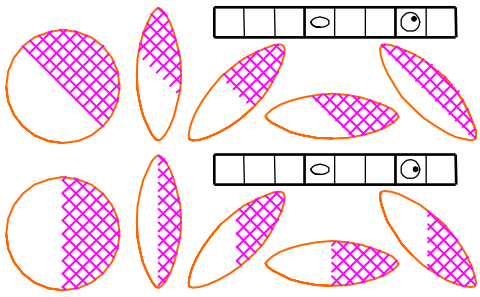
Similarly when the control description is “rock face – northern part” the same way of thinking should be used. If the middle of the rock face can be defined very exactly, then the correct control marker can be placed closer to, but north, of the middle. But if it is difficult to define the middle and the ends of the rock face a larger margin must be used when placing the correct control marker north of the middle. If two or more control markers are placed north of the middle it is the one which is placed most to the north which is the correct control marker. If an alternative control marker is placed outside the end of the rock face the margin must be larger if it is difficult to define the end of the rock face.

The important rule which shall be followed is: It must be possible to solve the problem from the path by using map and/or compass.

Example 2. **The position of control markers on a hill.** When placing control markers on a hill, the planner shall proceed in the same way as for the position of control markers at a rock face, see above. If the edges of the hill are distinct the margin/distance can be shorter between the correct control marker and alternative control markers in comparison to the situation in which the edges of the hill are unclear. The planner also has to consider that the margin in the direction of sight normally needs to be larger than that in sideways viewing in order to achieve good separation.

Example 3. When placing a control marker at a side of a boulder, edge of a pit, foot of a hill etc. then the correct control marker is the one placed where the feature extends the most in the indicated direction.

The positioning of control markers on E-courses must be paid special attention so that the control marker is exactly placed at the correct spot. This is particularly important for control markers near the viewing point stake/path or where the competitor can walk because deciding correct position is better at short distance. The same thing is valid for so called “direction-controls”, e.g. the side of a boulder. The control markers must be exactly placed at the correct spot, which means less than the width of a control marker or even more at sharp edges of a boulder or similar features. At such positioning it is also important that the control marker stake is vertical and that the foot of the stake under the control marker is visible.



Example 4. The part of an object is illustrated in the figures. If more than one control marker is place in the same sector then the correct one is that one who is placed most in the indicated direction. Observe that always adequate margin must be used in order to achieve distinctness. Also observe that even if fig. 2 and 4 in the upper row are correct it is much better to use northern or eastern part for features shaped like those. The same, for fig. 3 and 5 in the lower row, for those it is better to use north-east part and south-east part respectively.

It should not be possible to give a better definition of the placement of the correct control marker.

The control description “tip” shall only be used when the control flag can be placed exactly on the tip, for example a clear tip at a marsh or similar feature. For area features, for example a forest corner or similar where an exact position of the tip cannot be decided, or a tree occupies the tip, the description “corner”, “inside” or “outside”, even for sharp angles, shall instead be used where this better defines the correct placement of the control marker.

1.8. Time controls

The scale and equidistance of the map shall be the same for the time controls as for the rest of the course. On the time control map there shall be a north direction arrow.

The level of difficulty of the time control shall be the same as for the course as a whole. In addition the requirements of clarity for time controls must be at least as high as for the course and the exactness of the control circle and the definition must be the same.

The planner should choose control points for time controls with well defined limits and consequently avoid objects which are difficult to define e.g. border of vegetation, edge of forest or marsh, foot of hill and equally where the terrain features has no clear foot. In addition the whole control point, e.g. a feature with some length shall be visible in its total length from the viewing point stake, if it is essential for solving the problem.

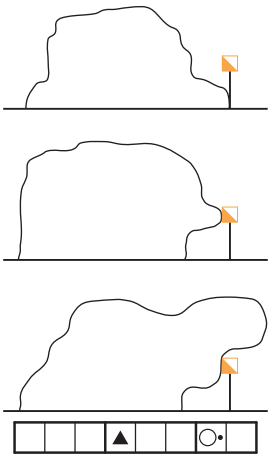
When choosing time a control the planner has to consider that the competitor shall have limited possibilities of seeing the control markers when approaching the viewing point.

The size of the map should be limited, round with the diameter 10-15 cm or quadratic with the side 10-15 cm, and the control circle shall be right in the middle of the map in order to quickly be seen by the competitor. The control description shall be placed right under the control circle. Don't forget that a north arrow and meridians shall be on the map.

Maps with the time controls shall be shown at the Competition Centre after the finish.

2. Positions of control markers at the controls and control descriptions

2.1. Boulder



Side. The normal position and control description for a boulder is "side". The correct control marker shall be placed at the ground in one of the eight (8) directions. The control marker shall be placed as close to the boulder as possible so that the control marker touch the boulder. If the boulder is lower than the control marker in that direction than the pole shall touch the boulder. The right control marker shall be placed exactly at that part of the boulder which is most in the direction defined in the definition.

At boulders shaped like in fig 3 the projection should not be used, but the control marker shall be placed like shown in the figure.

At the top. The position at the top of a boulder should be avoided and only be used if the visibility is better than the side.

If the control description is "boulder", (no side given) than the right control marker shall be placed at the central point on the boulder's top face. But the definition, "boulder – top" should not be used. Instead e.g. the definition "boulder – north part" can be used if the boulder is big enough. Then the right control marker shall be clearly placed at the top of the north part of the boulder.

2.2. Between the boulders

The right control marker shall with this definition be placed between the boulders, exactly centrally between the boulders on en imaginary between the two nearest point of the boulders.

The same principle should used between a boulder and another feature, e.g. a knoll or a hill or other combinations of features.

2.3. Boulder cluster

For a boulder clusters, only the control description “side” of the cluster should be used.

For a pile of stones the same control description as in section 2.4 can be used.

2.4. Boulder field/Stony ground

For boulder field/stony ground the control description, side, part, edge and corner can be used. If only the control description boulder field is given the right control marker shall be placed in the middle of the area.

2.5. Boundary stone

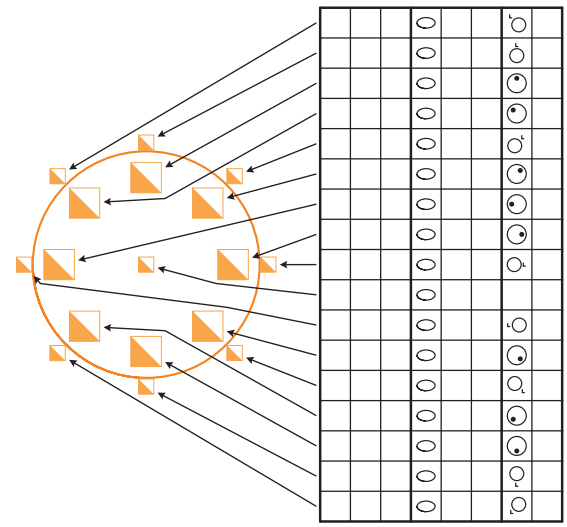
See section 2.1, the same as for boulders. If the boundary stone has a fundament, than also that is included in the object.

2.6. Hill, knoll

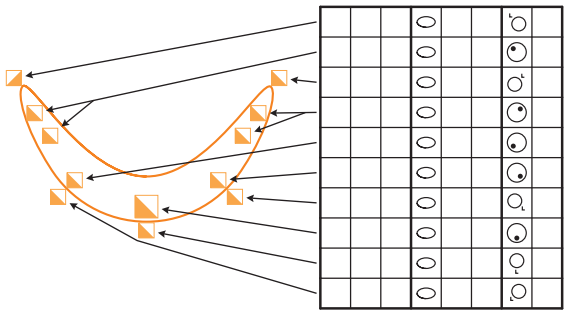
“On the hill”. The control description “hill” means that the correct control marker shall be placed on the central part of the hill.

Note: The control description “hill – top” shall not be used.

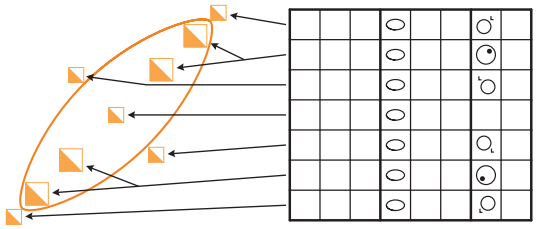
Part: For a hill the control description can be e.g. “hill – north east part”. Then the correct control marker shall be clearly placed on the part of the hill which is most in the north east direction and clearly above the contour which shows the foot of the hill. In cases where the position of the foot is unclear the margin shall be greater.



Foot. It is also possible to choose one of the eight (8) directions at the foot of the hill. Then the correct control marker shall be placed at that foot spot at the foot of the hill which is most in that direction.



If the control description (foot) is used for a hill, there should be a well-defined foot of the hill. If the hill just fades out this control description should be avoided and instead shall “part” of the hill be used and then the correct flag shall be placed clear above the contour.



The control description “side” shall not be used for height or knoll.

“Between hills”, is always the shortest distance between hills, there is normally only one distance which is the shortest. Only with exact parallel features are there more than one “shortest distance” but this is normally only the situation for man made features, e.g. parallel houses.

2.7. Pit

If the control description is “pit” the correct control marker shall be placed in the central part of the pit.

Part. With e.g. the control description “pit – north-east part” the correct control marker shall clearly be placed in that part of the pit which is most in that direction and below the edge and clearly below the contour which indicate the edge of the pit. In cases when the edge of the pit is diffuse the margin shall be greater.

Edge. It is also possible to choose one of the eight (8) directions for the edge of the pit. Then the correct control marker shall be placed at the edge of the pit which extends most in the defined direction. If the pit has a diffuse edge, “part” of the pit shall be used instead and the correct control flag shall be placed clearly below the contour indicating the edge.

The control description ”side” shall not be used for a pit.

2.8. Spring/well/pond

Natural. For spring, waterhole and pond shall the same rules be followed as for pits.

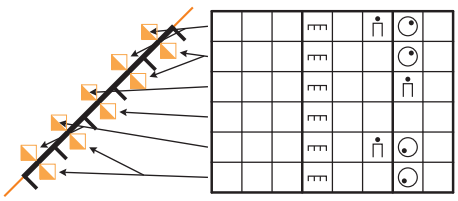
Man-made and with concrete walls and covered. For spring or well which is man-made, e.g. a tube of concrete material should the same rules should be used as for boulder, see paragraph 2.1.

2.9. Marsh

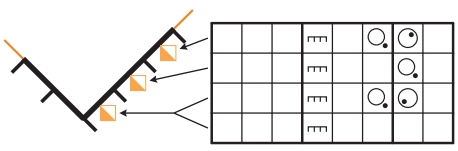
A marsh should have the same placement of control markers as for a pit, se section 2.7

2.10. Rock face

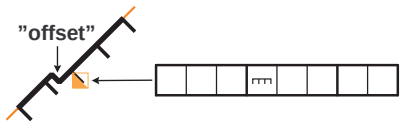
Foot. The most usual control description is “rock face – foot”. The correct control marker shall be placed at the middle of the rock face and at the foot of the rock face. With rock faces **without bends** also part can be used. The correct control marker shall then be placed clearly in the defined direction, e.g. “rock face – foot – south-east part”.



At rock faces which have a **corner** or a bend both side and part can be used in combination, e.g. “rock face-foot – south side – east part. Then the correct control marker shall be placed of that part of the rock face which is faces south and in the east part of that side.



At rock faces with a small offset, which means that the rock face is not totally straight, then the length of the small offset, if it is not shown on the map, shall not be included in the total length of the rock face. If the offset is shown on the map then it shall be included in the total length of the rock face.



On top. In the similar way as for the control description "rock face – foot", also "rock-face – at top" can be used. Then the correct control marker shall be placed at the middle of the rock face's top. For "part" the same rules should be used as for placement at the foot of the rock face.

Note: "On top" for other features normally means that the control marker shall be placed on the highest point. For rock faces it means that it should be place at the upper part to indicate the contrast to a position at the foot.

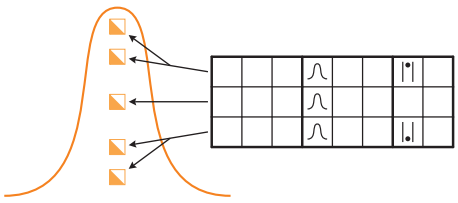
For rock faces shall the above used control descriptions be used. But the description shown shall not be used for rock faces.

Between rock faces or **between rock face and other features.** In the same way as for "between" other features it is the shortest distance between the two features which counts. This is also the case for "between rock faces" or "between rock face and another feature". However, with such control features the planner shall be restricted to using only those which are very clear, taking into consideration the shapes of the features, extension etc., where the shortest distance is.

The length of the rock face. Sometimes it is difficult to decide where the rock face starts and ends. Normally the planner shall avoid such control features. The planner can, in special cases where there is a special need to have different control features, use a diffuse rock face but then specify the length in the control description, square F. This shall be announced in the pre-race information.

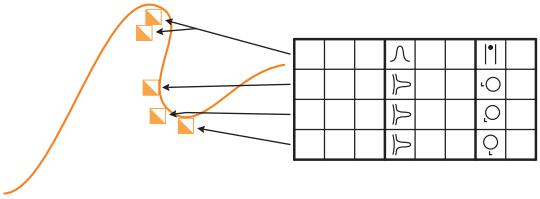
2.11. Re-entrant

For re-entrances there are three main control descriptions. "Re-entrant", "re-entrant – upper part" and "re-entrant – lower part".



The re-entrant is the area from the "top" of the re-entrant to a line between the ends of "legs" of the re-entrant. The length of the legs is from the "top" down to the point where the legs/curves bends the first time.

If the re-entrant has two legs of different length only the control description "re-entrant – upper part" shall be used.



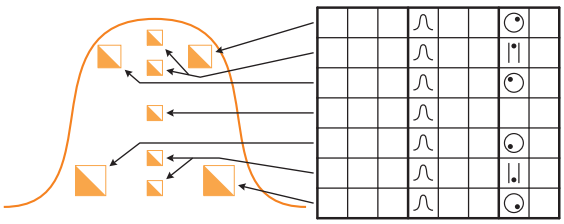
The correct control marker shall be placed on the central line of the re-entrant.

For the control description "re-entrant" the correct control marker shall be placed in the middle (from top to bottom) of the re-entrant.

The correct position of the correct control marker for the control description "re-entrant – upper part" is the upper control marker between the middle part and the top.

The right position of the correct control marker for the control description “re-entrant – lower part” is the control marker placed nearest the base line between the middle part and the base line.

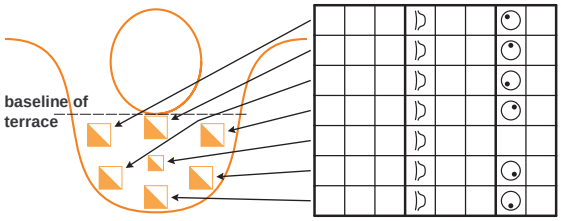
If the re-entrant is wide it is possible to place the correct control marker at other places than on the centre line. Then the control description “part” should be used.



If a re-entrant is used as a Zero-control, special attention should be paid to the clarity.

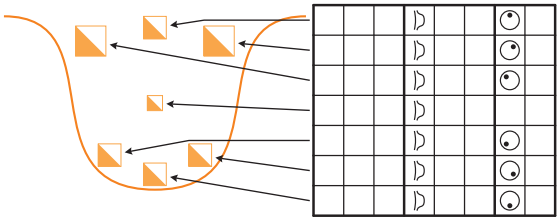
2.12. Terrace

For a terrace the length of the “legs” should be estimated in the same way as for a re-entrant, but if there is a hill on the terrace than the base of the terrace is a line at the contour, (the foot of the hill, see figure).



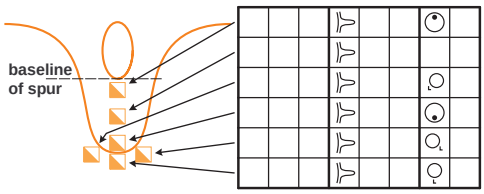
As a consequence it follows that, for a terrace with legs of different length placements of control markers shall only be at the outer part of the terrace.

That means for a terrace with the control description “terrace” the right position of the correct control marker is at the centre of the terrace in the same way as for a hill. As a terrace only the flat part counts. Where the surface starts to slope down, that is outside the terrace. Consequently there is a difference between a spur and a terrace, see point 2.13, where the whole part of a spur down to the foot of the spur is included in the spur which is not the case for a terrace. Normally the control description “spur” should be used for terrace/spur-shaped features. Consequently, as very few natural features are flat, the control description “terrace” should normally only be used for man made terraces. It also means that for a terrace the control description ”foot” cannot be used.



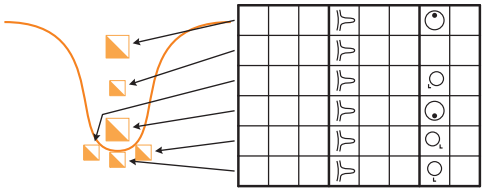
2.13. Spur

For a spur the length of the “legs” should be estimated in the same way as for a re-entrant, but if there is a hill on the spur than the base of the spur is a line at the contour, (the foot of the hill, see figure).



As a consequence it follows, that for a spur with legs of different length, positions of control markers shall only be at the outer part of the spur.

That means that for a spur with the control description “spur” the right position of the correct control marker is at the centre of the spur in the same way as for a



hill. Other control description and positions are similar to that of hills, se section 2.6, which also means that the control description “side” shall not be used for spur.

2.14. Watercourse, ditches

In watercourses, ditches the correct control marker shall be placed in the middle (central line) down in the watercourse or ditch if no other control description is given.

Alternatives are to place the control marker at the edge but then a control description of the direction must be given.

Part of the watercourse/ditch also can be used if it is a watercourse/ditch which is broad. The “part” is from central line to the edge.

2.15. Road, path

The principle for roads and paths is the same as for watercourse/ditch, which means that the right placement of the correct control marker is on the central line also at a crossing and junction.

For obvious reasons, it can be impractical to place control markers in the middle of the road except for road- and path-ends it is better to use part or edge of crossing or junction.

The control description “path – end” alternative “road – end” shall only be used if the end is very distinct or can be decided exactly with the help of other features on the map near the end. This is especially important for “path – end”. Paths normally don’t end up sharply in the forest, but they can end at other objects.

2.16. Vegetation boundary, boundary, ride, fence, power line etc

Vegetation boundary, power-line (single line), fence and similar have to be looked upon as linear features but ride and power-lines (multi lines) etc should be looked upon as areas.

For “linear-features” the control description, end, crossing, bend, junction etc can be used and the correct control marker position is always at the centre. As a consequence of that the definition “end” of a linear object cannot be combined with “side”.

For area objects the same position as described in section 2.15 should be used.

2.17. Forest corner

The control description “forest corner” should only be used when there is an open land area on two sides, either open land and/ore a road. But a path in the forest should not be looked upon as an edge of the forest.

2.18. Thicket, copse

Should only be used if the edges are very clear. The positioning of the control flag at the side of the thicket or similar shall be such that the flag is placed at the boundary and touch the feature at the height of the flag, see also positioning control flag at a boulder.

2.19. Earth cellar

An earth cellar which has the shape of a hill shall be considered as a hill whose edges are that part which is above the normal ground-level.

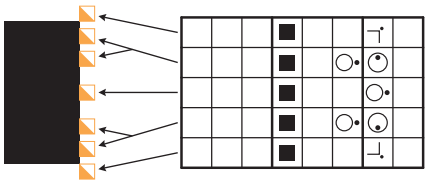
2.20. Building, house

Buildings where the outer shape does not fit with the map, e.g. missing off a veranda etc, shall not be used as control feature.

Inside the building:
If the control description is only "building" than the correct placement is on the ground in the middle of the building. Other position inside the building shall be defined as part of the building, equal to a hill. Also the control description "inside corner" can be used. This type of control should only be used in special cases, see section 1.4 above.

Outside a building:
Outside a building the correct position of the control markers is at (touching) the wall. If the roof goes outside the wall that should not be taken into account.

Side. For control description, e.g. "building – west side" the correct control marker position is at the middle of the west side. An alternative is e.g. "building – west side –south part". Then the correct position is clearly closer to the south corner. Side is shown in square F. Part of side is shown in square G.



Corner. An alternative to the side is to define a corner by direction. The correct position of the control marker is directly at the corner (definition "outside corner"). The control marker should be visible looking along both walls.

Side, clarification. If there is more than one part/side of a building that faces the defined direction, only that part which is most in that direction shall be regarded.

Example 1.
For this building should only the marked part be regarded as "north side".

Example 2. For this building should only the marked part be regarded as the "south side".

2.21. Charcoal burning ground

Charcoal burning grounds in the terrain are starting to be diffuse due to age. Charcoal burning grounds therefore should not be used unless they are clearly visible and the boundaries are clearly defined. To make it clearer, the diameter of the charcoal burning grounds can be shown in square F. This shall be notified in the pre-race information.

The extent of a charcoal burning ground is defined by the bottom of the ditch which normally surrounds it. In some cases there is more than one ditch and then the outer ditch counts.