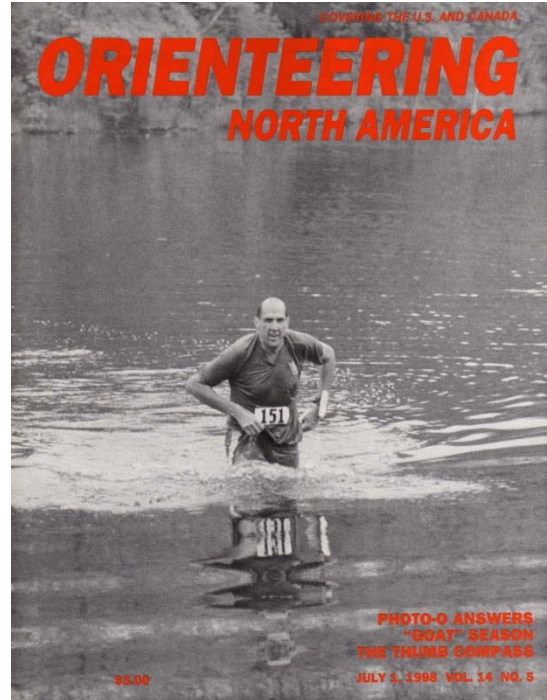


Forbidden features: what they are and what makes them so

*A brief study of competition rules and mapping specifications
by Adrian Zissos, Calgary, Canada*

The July 1998 cover of *Orienteering North America* showing Steve Fluegel emerging from a body of deep water created considerable controversy about whether Steve had been caught in the illegal act of crossing a forbidden feature, in this case, a body of deep water (Steve is, after all, gigantically tall). If you are like most orienteers you probably have an opinion on this matter, and it might even be correct. But regardless, ten years is a long time and a lot has changed since 1998 in orienteering, including new versions of the mapping specifications, updates to the rules, and most importantly, the development of Sprint orienteering. It is time to re-visit the question of what features are forbidden to cross, which is even more complex today than it was a decade ago.

Confusion about forbidden features is growing, as exemplified by a situation at a recent Sprint race. On one leg in particular, many people ran through the ground floor of a multi-level car park. The car park had been mapped using the grey *building* symbol and was therefore forbidden to enter. When informed of their illegal actions, competitors were often taken aback and one runner said, “if it is forbidden then it should be overprinted with the out-of-bounds symbol.” The rather cruel response was that he needed to learn the International Specification for Sprint Orienteering Maps (ISSOM) mapping rules. Trying to calm the confrontation, I confidently added that, regardless, it was always forbidden to run through things mapped as buildings. But my assertion rang false and I decided to investigate and check if indeed I was correct.



Caught in the act?

This article plumbs the murkiest depths of orienteering rules and mapping specifications in order to answer the surprisingly complex question of “What features can I go across legally during an orienteering race?” The answer, alarmingly, turns out to be “it depends”: on which map you are using; in which country you are running; and on which governing body sanctioned your race. So read on, if you have curiosity and tolerance for a little tedium, as we examine more closely the question of what things are forbidden in orienteering and what makes them so.

Two mapping specifications for foot orienteering

The importance of forbidden areas and un-crossable features is increasing in step with the growing popularity of Sprint racing. In the good old days of forest-only orienteering it wasn't a big concern, really, since there are very few forbidden areas in the forest. There is nothing inherently illegal about, for example, crossing a body of deep water. But when Sprint racing dragged orienteering into the city, it faced a big problem – things in cities are very often forbidden to cross (e.g. “don't walk on the grass”) or in extremely bad taste to cross (e.g. flower beds and private gardens).

The IOF's *International Specification for Orienteering Maps* (ISOM), designed for forest terrain, doesn't work well for Sprint orienteering which tends to take place in more urban settings. There are a number of reasons why, including the many more restrictions which have to be considered in parks and urban terrains, such as physical barriers and areas with forbidden access.

To solve this problem, the IOF developed the ISSOM specifically for urban maps, in part to provide more ways for map makers to show areas that are forbidden to enter and line features that are not allowed to be crossed. So nowadays, for foot orienteering, we have two mapping specifications (ski orienteering and mountain bike orienteering have their own map specifications):

- ISOM – International Specification for Orienteering Maps. The specification for traditional forest orienteering maps. Last revised in 2000 and currently being updated.
- ISSOM – International Specification for Sprint Orienteering Maps. The newer specification, for Sprint maps. Last updated in 2007.

The latest mapping specifications can always be found on the IOF website: www.orienteering.org. It is worth glancing through these excellent documents once or even more each year.

ISOM – International Specification for Orienteering Maps

ISOM has been used for making forest orienteering maps for a long time. Over the years habits and accepted practices have developed among orienteers and a fuzzy collection of general knowledge has grown, much of which is fairly helpful and mostly true, but some of which is astonishingly and absolutely wrong. For example, many orienteers take for granted that it is forbidden to cross olive green

areas (ISOM 527 – *settlement*) on the map and can be startled to discover that neither the ISOM mapping specifications nor the IOF rules specify that it is forbidden. Likewise, there is no rule against running over an impassable cliff nor through a building.

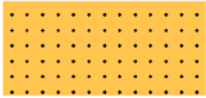
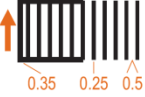

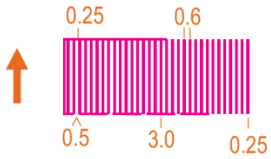

The confusion is in part due to ambiguous wording in the ISOM (note that the ISOM is currently under review and an updated edition is expected shortly). The 2000 version of ISOM (most recent at time of writing) includes several symbols described with qualifiers, for example “High Fence” or “Un-crossable river”. Some of these qualifiers are ambiguous – for example, does “un-crossable” mean that it is *forbidden* to cross the feature? Or does it mean that it is *difficult* to cross the feature? According to Håvard Tveite, Chairman of the IOF Mapping Commission:

“In ISOM, impassable and un-crossable are used as qualifiers for some features/areas that are very difficult to pass. However, you might be able to pass/cross these areas/features, and you will not be disqualified if you try and are successful.”

Obviously having to ask the IOF for clarification of wording is not ideal and the rules should, and hopefully will soon, be updated with clearly worded symbol descriptions. Also note that the IOF explanation still is a bit confusing since it clearly doesn’t apply to ISOM-707 *un-crossable boundary* (see table below) which is one of the forbidden ISOM symbols. Because of the ambiguity in the ISOM, it is not surprising that many orienteers would think that, for example, ISOM-201 *impassable cliff* would be forbidden to cross – even though that is not the case. **In fact, to the astonishment of most orienteers, the ISOM has only five forbidden symbols.** The ISOM “forbidden five” are shown in Table 1.

ISOM-415 *cultivated land* is seasonally out of bounds. This means that in general you can’t determine if this symbol is forbidden to cross or not. Organizers should therefore overprint this symbol with ISOM-709 *out of bounds* if the area is forbidden at the time of competition.

Table 1 The ISOM Forbidden Five

	<p>415 Cultivated land</p> <p>Cultivated land which is seasonally out-of-bounds due to growing crops</p>
	<p>528 Permanently out of bounds</p> <p>Areas which are permanently forbidden to the runner are shown as out of bounds.</p>
	<p>707 Uncrossable boundary</p> <p>A boundary which it is not permitted to cross..</p>
	<p>709 Out of bounds</p> <p>An out-of-bounds area, see also symbol 528, is shown with vertical stripes. A bounding line may be drawn if there is no natural boundary, as follows:</p> <ul style="list-style-type: none"> • a solid line indicates that the boundary is marked continuously (tapes, etc.) on the ground, • a dashed line indicates intermittent marking on the ground, • no line indicates no marking on the ground.
	<p>711 Forbidden route</p> <p>A route which is out-of-bounds is shown with crosses.</p>

ISSOM – International Specification for Sprint Orienteering Maps

In contrast, the Sprint Specification (ISSOM) has many forbidden symbols and is very clear about what is forbidden to cross. It states that “features which are mapped un-crossable (e.g. walls, fences, cliffs, water and hedges) are also forbidden to cross”. This was one of the key reasons for creating the new mapping specification – to provide the mapper and course planner with adequate symbols to depict these forbidden area and line features.

The ISSOM is emphatic that forbidden symbols be taken very seriously, not only by competitors but also by organizers and course planners:

“The restrictions and constraints of sprint orienteering must be taken seriously by the organizers and course planners. In particular:

- Both mapmaker and course planner should consider all possible route choices and make decisions on impassable features and out-of-bounds areas.


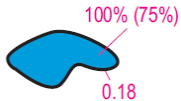
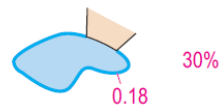
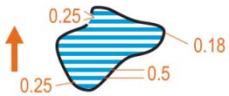

- The course planner should not encourage unfair actions from the competitors, such as crossing barriers or areas with forbidden access. If it is unavoidable to set legs that cross or skirt areas with forbidden access or impassable walls and fences, then they have to be marked in the terrain, and observers should be present at the critical points.
- Crossing of certain areas and linear features in parks and urban terrain may be forbidden by law. *Consequently, competitors who do not obey this rule, which is part of the IOF competition rules, must be disqualified."*

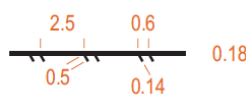
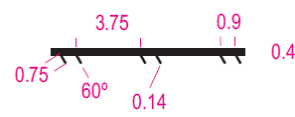
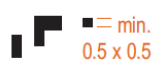
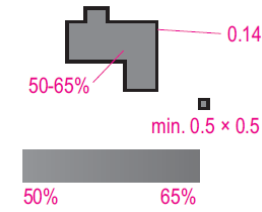
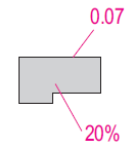

ISOM / ISSOM Comparison

For a glimpse of how ISOM and ISSOM differ some examples are compared in Table 2 (a more complete comparison is available at www.barebones.ca). These examples have been chosen to illustrate typical differences including ISSOM's clearer wording, variations in symbol color, size, and dimensions, and additional forbidden symbols. Some specific points to notice:

- the different treatments of bodies of water in the two specifications (ISOM 301 versus ISSOM 304.1 / 305.1)
- an example of ISOM "uncrossable" versus ISSOM "forbidden". Same symbol dimensions, but different text (ISOM & ISSOM 309)
- a new (forbidden) symbol for Sprint maps (ISSOM 421 *impassable vegetation*)
- another example of ISOM "uncrossable" versus ISSOM "forbidden". In this case demonstrating the use in ISSOM of thicker black lines to denote forbidden features (ISOM & ISSOM 524).
- example of different coloring in ISSOM to improve map readability (ISOM 526 versus ISSOM 526.1)
- example of how ISSOM shows places where buildings can legally be passed through (ISSOM 526.2)
- a symbol that was dropped for Sprint maps (ISOM 710 - *dangerous area*)

Table 2 Partial ISOM/ISSOM comparison chart

Symbol	ISOM 2000	ISSOM 2007 (Sprint)
ISOM 	301 Lake Large areas of water are shown with dot screen. Small areas of water should be shown with full colour. A black bank line indicates that the feature cannot be crossed.	301 – does not exist in ISSOM
ISSOM 	304.1 – does not exist in ISOM	304.1 Impassable body of water Forbidden to cross An area of deep water such as a lake, pond, river or fountain which may constitute a danger to the competitor or has forbidden access. The dark blue colour and the bordering black line indicate that the feature cannot or shall not be crossed.
ISSOM 	305.1 – does not exist in ISOM	305.1 Passable body of water An area of shallow water such as a pond, river or fountain that can be crossed. The body of water shall be less than 0.5m deep and runnable. If the body of water is not runnable it shall be represented with the symbol (304.1). ...
ISOM & ISSOM 	309 Uncrossable marsh A marsh which is uncrossable or dangerous for the runner. A black line surrounds the symbol.	309 Impassable marsh Forbidden to cross A marsh which is impassable or which may constitute a danger to the competitor. The feature cannot or shall not be crossed.
ISSOM 	421 – does not exist in ISOM	421 Impassable vegetation Forbidden to cross An area of dense vegetation (trees or undergrowth) which is impassable or which shall not be crossed, due to forbidden access or because it may constitute a danger to the competitor.

Symbol	ISOM 2000	ISSOM 2007 (Sprint)
<p>ISOM</p>  <p>ISSOM</p> 	<p>524 High fence</p> <p>A boarded or wire fence higher than ca 1.5m, not crossable to the average orienteer, e.g. deer fence.</p>	<p>524 Impassable fence or railing Forbidden to cross</p> <p>An impassable fence or railing, which shall not be crossed, due to forbidden access or because it may constitute a danger to the competitor because of its height.</p>
<p>ISOM</p> 	<p>526 Building</p> <p>A building is shown with its ground plan so far as the scale permits.</p>	<p>526 – does not exist in ISSOM</p>
<p>ISSOM</p> 	<p>526.1 – does not exist in ISOM</p>	<p>526.1 Building Forbidden to pass through or over</p> <p>A building is a relatively permanent construction having a roof. ... The black screen percentage should be chosen according to the terrain. A dark screen gives a better contrast to passable areas, such as streets, stairways and canopies, while a light screen makes contours and course overprint more clearly visible. The black screen shall be the same for the whole map.</p>
<p>ISSOM</p> 	<p>526.2 – does not exist in ISOM</p>	<p>526.2 Canopy</p> <p>A canopy is a building construction (with a roof), normally supported by pillars, poles or walls, such as passages, gangways, courts, bus stops, gas stations or garages.</p>
<p>ISOM</p> 	<p>710 Dangerous area</p> <p>An area presenting danger to the competitor is shown with cross-hatched diagonal lines.</p>	<p>710 – does not exist in ISSOM</p> <p>[AZ: instead use either 528 <i>permanently out of bounds</i> or 709 <i>out of bounds</i>]</p>

Rules of Competition – more forbidden symbols

International mapping specifications are the primary method of specifying forbidden features. As well, the IOF rules and national federation rules of competition can specify further forbidden features. And event notices may specify event-specific forbidden features.

The IOF publishes rules of competition that apply to all IOF-sanctioned events, including the World Champs, World Cups, World Masters, Junior Worlds, and of course all WRE events. National federations generally have their own rules that apply to all non-IOF-sanctioned races in their country. At WRE events, keep in mind that the IOF rules apply only to the WRE courses, while national federation rules apply to all other courses – so that in the same event features may be forbidden for competitors on some courses but not for competitors on others.

Competition rules may specify that map symbols are forbidden to cross even though they are not forbidden to cross in the ISOM or ISSOM - for example IOF rule 17.2 specifies that ISOM-710 *dangerous area* is forbidden to enter. Rules may also specify some areas as forbidden even if there is no corresponding map symbol - for example, the USA and Canadian rules specify that private property is out of bounds (even though there is no ISOM or ISSOM *private property* symbol).

To better understand the issues relating to competition rules, here are some excerpts from the foot-orienteeing rules of the IOF, Canada, USA, Britain, Australia, and New Zealand.

IOF Rules

The IOF rules rely almost entirely on ISOM and ISSOM and specify only one additional forbidden symbol, ISOM-710 *dangerous area*.

Table 3. IOF rule excerpt

IOF Rule 15 - Maps

15.1 Maps, course markings and additional overprinting shall be drawn and printed according to the IOF *International Specification for Orienteering Maps* or the *IOF International Specification for Sprint Orienteering Maps*. Deviations need approval by the IOF Council.

IOF Rule 17 - Restricted areas and routes

17.1 Rules set by the organising Federation to protect the environment and any related instructions from the organiser shall be strictly observed by all persons connected with the event.

17.2 Out-of-bounds or dangerous areas, forbidden routes, line features that shall not be crossed, etc shall be marked on the map. If necessary, they shall also be marked on the ground. Competitors shall not enter, follow or cross such areas, routes or features.

British, Australian, and New Zealand national federation rules

The British, Australian, and New Zealand rules adhere closely to the IOF rules and do not directly specify additional forbidden symbols.

Table 4. Excerpts from British, Australian, and New Zealand national rules

BOF Rule - 1.6 Respect for Property and the Public

1.6.1 Nothing shall be done to prejudice the goodwill of landowners, their tenants or agents. Competitors and officials shall comply with all requests made by such persons or notified to them by the Organiser

BOF Rule - misc

1.7.6 [...] The course shall be planned so that 'out of bounds' areas and dangerous features can be avoided easily.

5.1.1 Any map used for an event shall be drawn according to the 'International Specification for Orienteering Maps 2000' (ISOM 2000), or the 'International Specification for Sprint Orienteering Maps 2007' (ISSOM 2007), subject to any specific British Orienteering amendments as described in Appendix H (Mapping).

Orienteering Australia Rules

3.4.2 Fairness of legs

[...] Legs which encourage competitors to cross forbidden or dangerous areas must be avoided.

The course must be planned to avoid tempting competitors to take shortcuts through private property and other out-of-bounds areas. If there is such a risk, a referee should be at such locations to prevent possible attempts. [AZ: note the implication that private property is out of bounds, even if not mapped using a forbidden symbol].

17.1 Rules set by Orienteering Australia or the organising Association to protect the environment and any related instructions from the organiser shall be strictly observed by all persons connected with the event.

New Zealand Orienteering Federation Rules - Appendix 1

j. Out of bounds areas, dangerous areas and forbidden routes shall be overprinted in accordance with the latest edition of the IOF Mapping Specification.

Canadian Orienteering Federation rules

The COF rules apply to all events held in Canada, other than IOF-sanctioned races. The COF rules state that private areas are forbidden to enter. Additionally the COF rules specify that the ISOM and ISSOM mapping specifications are to be interpreted such that it is forbidden to cross "un-crossable" symbols. This includes symbols such as ISOM-304 *un-crossable river*, ISOM-307 *un-crossable marsh*, and, depending on your interpretation, possibly also ISOM-201 *impassable cliff* – all of which may be legally crossed in races in many (most?) other parts of the world.

These national rules can lead to two types of problems. The lesser is that Canadian orienteers, taught not to cross these symbols, will be at a disadvantage internationally unless they are aware of the rule variations. More seriously, foreign orienteers visiting Canada are likely not aware of the Canadian interpretation, and may therefore deliberately enter forbidden areas resulting not only in their possible disqualification, but more worryingly potentially causing problems for future events due to disgruntled land owners who have had runners trespassing on their property.

Table 5. Canadian Orienteering Federation rules excerpt

COF Rule 8.4 - Out-of-Bounds Areas

- 8.4.1 All obviously private or enclosed areas such as gardens are out-of-bounds.
8.4.4 Participants shall not cross areas or features marked as un-crossable (thick outline) except where a crossing place is indicated, unless otherwise specified in the Meet Information Sheet.

US Orienteering Federation rules

The USOF rules apply to all races held in the USA, with the exception of IOF-sanctioned races. In the USA, as in Canada, it is not allowed to enter private yards and gardens.

Table 6. USOF rules excerpt

USOF Rule - 38. Out of bounds areas

- 38.2 The competitor shall not enter the following areas except when specific permission is included in the Event Information:
- Yards and gardens;
 - Sown land and land with growing or standing crops;
 - Limited access highways or fenced railways;
 - Areas marked "out of bounds";

What is an orienteer to do? And what are organizers to do?

Historically, the question of forbidden features hasn't been a huge problem; most orienteers have been enjoying the sport for many years without thinking this much about the subject. However, with the growing popularity of Sprint orienteering, the issue is becoming more important. Here are some tips for both competitors and organizers, to ensure fair and safe completion while properly respecting land owners and the terrain in which we compete.

- Competitors should use good judgement and avoid dangerous and restricted or obviously private areas, regardless of how the map is drawn. Also, in order to fully understand what is forbidden to cross by the rules, competitors should periodically review the latest ISOM and ISSOM mapping specifications and be aware of which mapping specification is being used for every race. Also they should be aware that each country has special rules and may interpret the mapping specifications differently.
- Course planners must have a comprehensive understanding of forbidden symbols, especially when setting Sprint courses. They should set courses that reduce the chances of accidental crossing of forbidden areas and keep in mind that forbidden areas are primarily about safety and respect, and not to be used to "trick" or "trap" competitors. Consider marking forbidden areas in the terrain with tape, for example, when the forbidden feature might be difficult to see on the map (e.g., very thin) or accidentally crossed (e.g., a corner of private garden) at race speed.
- Mappers should be especially clear when drawing forbidden features, and need to develop techniques for clearly showing difficult-to-see forbidden features (for example, perhaps using the *distinct vegetation boundary* symbol around narrow strips of forbidden garden). Mappers must respect the ISOM and ISSOM minimum dimensions.
- Race organizers should be aware that some competitors may not know what is forbidden. It may be worth educating people by providing in the event notices a reminder of the map type (ISOM or ISSOM) along with a brief reminder of what is forbidden, as well as a more complete description of any especially significant forbidden features.
- Organizers of WRE races and other IOF sanctioned events using ISOM maps must be aware that forbidden areas in the terrain which are not mapped as ISOM-528 *permanently out of bounds* will have to be overprinted with ISOM-709 *out of bounds*, and line features that are forbidden to cross will have to be overprinted with ISOM-707 *un-crossable boundary*. For example, if an ISOM map includes some private residences that are forbidden to enter, then these areas must be overprinted with ISOM-709 *out of bounds*. [Test your understanding: why is this especially important for organizers of WRE races in the USA and Canada?]
- Rule makers in national federations are encouraged to look closely at their rules and consider adhering more closely to the IOF rules in order to standardize the interpretation of the IOF mapping specifications.
- The IOF mapping commission is encouraged to clarify the descriptions of the ISOM un-crossable symbols to make their interpretation absolutely unambiguous, through the use of unequivocal language.
- Everyone needs to realize that rules and mapping specifications evolve over time, and be alert to updates.

Case Study

To illustrate, here is a real-life example from a recent Sprint race. This is not meant as criticism of the race or any officials or participants, but is intended only as a convenient and topical example from which we all can learn. In a recent Sprint race (ISSOM map) there was a long and thin hedge that was mapped using ISSOM-421 *impassable vegetation* (forbidden to cross). This feature was

difficult to see on the map, and one leg went directly across it. Competitors who didn't notice the symbol illegally crossed through the thin hedge and gained an advantage over those who didn't. It was certainly accidental and the runners could not be faulted. What went wrong? Here are four things that perhaps could have been done differently to avoid this situation:

1. Was the mapping okay? Certainly the symbol should have had the minimum thickness specified by ISSOM of 4mm. Perhaps the vegetation should also have been emphasized, either with (a) an exaggerated, thicker line; or with (b) an ISSOM-416 *distinct vegetation boundary* (a series of small black dots). Alternatively, if absolutely desperate, perhaps the feature could have been overprinted with ISSOM-707 *uncrossable boundary* (a purple line) - although this trick should be avoided since as the ISSOM elegantly states: "excessive use of purple for indicating barriers is unfortunate".
2. Was the printing okay? Perhaps the impassable vegetation symbol did not print well on the event's printer.
3. Was the leg okay? Perhaps the course planner should have set legs that didn't tempt runners to cross this feature, realizing how thin the line was and how easily it could be misread at race speed.
4. Was the event execution okay? Perhaps the inside of the hedge could have been marked in the terrain with tape to stop runners crossing it. And perhaps a marshal should have been posted at the hedge to stop runners crossing it.

Ending

To end this unfortunately tedious study, we will quickly return to the specific illustrations that began this article. First, to the car park. For sure the runners who passed through the multi-story parking lot on the ISSOM map were out-of-bounds, and disqualification was the appropriate, if rather severe, penalty. As for my assertion that *it is always illegal to run through a building*, it turns out I was wrong since although ISSOM does forbid entering buildings, there is no such restriction on ISOM maps.

And what about Steve? If we make some assumptions such as: the photo was taken in the USA on an ISOM map and the water feature was mapped using ISOM-301 *lake* symbol then Steve was not doing anything illegal since there is nothing in the ISOM nor in the IOF or USOF rules that forbid crossing deep water. But if the photo was taken in Canada, then it is quite a different story: if he was on a WRE course he was okay since IOF rules apply and they do not forbid crossing deep water, but if not then he was certainly breaking Canadian rule 8.4.4 by crossing a feature marked as uncrossable.

Summary

What makes a feature forbidden?

1. Mapping specifications
 - a. ISOM (typically used for Long and Middle distance races)
 - b. ISSOM (typically used for Sprint races)
2. Rules of competition:
 - a. IOF rules for IOF sanctioned courses
 - b. National rules for non-IOF sanctioned courses
3. Event notices

With Sprint racing becoming ever-more popular, it is increasingly important that orienteers understand forbidden symbols. Remember that forbidden features are not there to "trick" orienteers, but to show dangerous and forbidden features so we can continue to enjoy fair and safe orienteering while respecting the land owners and environments in which our races take place.

To see a comparison of ISOM and ISSOM forbidden symbols visit www.barebones.ca

