EQUESTRIAN CANADA ÉQUESTRE

EVENTING

CROSS COUNTRY COURSE DESIGN GUIDELINES

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A project of the Equestrian Canada Eventing Committee - Officials Working Group

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This document includes a compilation of the standards for cross country course design accepted and in use world- wide with a focus on Canada. Resources include the Federation Equestre Internationale, Australian Equestrian Federation, British Eventing, Eventing Ireland and US Eventing Association

Section 1: PREAMBLE

These guidelines are meant to provide direction and support in which to work when designing and building Cross Country Courses at all levels.

These guidelines are intended to be a point of reference for all officials in order to achieve the same standard and safety level for horses and competitors at all National eventing competitions.

Section 2: DESIGN OBJECTIVES AND PHILOSOPHY

To support the Course Designers with the tools and information to provide a flowing course appropriate to the level of competition. Course Design should produce a “good picture” that is educational for both horse and competitor, yet, made to look easy by the best combinations.

The Course Designer should not “test the best” but provide a fair course that is appropriate for the level and give the average horse and competitor the opportunity to complete without taking too many Black Flag Alternatives.

The emphasis at lower levels should be on the education of horse and competitor, introducing a wide variety of fences and simple questions. As the levels progress, the degree of difficulty should reflect the relevant level. Intensity may increase as levels become higher, but care must be taken to keep in mind that each National level is consistent across Canada. Additionally, it is expected that national classes of a particular level should, in principle, be of the same standard as international classes of a comparable level.

Where different levels are running at the same venue, at all levels the the intent should be to minimize the number of shared fences.

The goal is seeing as many “finishers” as possible at all levels without compromising the degree of difficulty or overusing alternatives.

Section 3: DEFINITION OF A JUMPING EFFORT

An effort is any fence/obstacle that requires a horse to make a jumping effort.

Section 4: OBSTACLES WITH ALTERNATIVES

An obstacle with one or more alternatives should be counted as one jumping effort.

Dimensions of alternatives should be in accordance with the level and where possible the “Black Flag” rule should be used to create smooth lines and flow.

When dealing with upper-level courses, alternatives with extra efforts are better than requiring horses to do a circle as part of an alternative route.

Section 5: HEIGHTS AND OBSTACLES

Except for the first fence and where detailed in these guidelines, fences at every level should be built to maximum dimensions.

As a guideline, fences on a down slope, before a step, ditch or other unexpected situation should be about 5 cm below maximum height.

Fences should always be measured on the intended jumping line. Course Designers and Technical Delegates should also take this into account when measuring top and base spreads.

This does not mean that all parts of a fence between the flags within must be within the height limits, but rather all parts that the Course Designer and Technical Delegate expect the average horse and competitor to jump within reason.

Section 6: GENERAL GUIDELINES

- No fence can ever be justified by the use of an alternative(s) or frangible technology.
- No fence can be jumped in two directions unless it is a “Black Flag” and then only if it is not frangible.
- All frangible fences must be jumped in the direction of the flags.
- All courses should be measured fairly and reasonably.
- Course Designers should never try to “catch horses out”, surprise horses, or use unfair distances but should always give horses two or three strides to understand the question and offer a positive experience.
- All courses should prepare horses and competitors for the next level of competition, therefore, need to be at the appropriate level of difficulty.
- Course Designers should be looking to show horses what they can do, not what they can’t, at every level.
- All courses should “flow” and allow competitors to maintain a good rhythm. Course Designers should not attempt to slow horses down at the expense of the flow.
- Wherever possible have turns before a fence to help the horses’ balance rather than after fences.
- Course Designers must encourage the average competitor on an average horse to produce a good “picture”.

Section 7: ANCHORING FENCES

Just because a fence is heavy it can never be assumed that it won’t move when hit by a horse.

It is not acceptable to anchor any fence at any level with one anchor in the middle at the front.

A minimum of two anchors per jump should be used and the bracket should be fastened to an integral/strucural part of the fence. Fasten with a stable fastener.

In some situations, such as lined water jumps or all-weather arenas, posts or ground anchors cannot be used. Fences could also be rendered immovable with the use of additional framework.

Section 8: FRANGIBLE TECHNOLOGY/ DEVICES

Please refer to the Equestrian Canada Rules for Eventing and https://inside.fei.org/fei/disc/eventing/risk-management/devices

The use of a frangible device cannot justify the use of the wrong fence in the wrong place.

Section 9: OVERHEAD HAZARDS

In the process of designing, building, preparing, and inspecting courses it is very important to look out for overhead hazards that may not be immediately obvious on both the direct line and, if there is one, on the line to be taken on a long route/option. Such hazards (ex: tree branches, roof, keyhole) can cause a competitor to be knocked from their horse. The Course Designer and Technical Delegate need to agree on the best course of action to deal with any such instances whether it is removing the hazard or preventing horses passing underneath it.

Section 10: HORSE VISION

Of paramount importance is the knowledge that horses are dichromatic and therefore see in contrast, believed to be in shades of yellow and blue, as opposed to humans who are trichromatic and see in colour.

It is believed that horses take up to seven times longer than humans to adjust from light to dark and vice versa. Course Designers should therefore be very aware of shadow and light into dark. Horses should have at least two strides to adjust in the “dark” before a fence.

Horses are prey animals that can see through 340 degrees but cannot see 10 degrees in front or 10 degrees behind. This means that in the last 5m/(16.4 ‘) the horse gains more and more information from the sides and less and less from directly in front.

Decoration on the top corners of spread fences help the horses to read the front and back of spreads. A pair of flags set in the middle of a spread fence with no other decoration is not advised as the flags take away from the horses’ ability to read the leading edge.

Any decoration in front of the leading edge (trees, shrubs) helps the horse to read the leading edge and therefore helps to keep the horse away from the leading edge.

Section 11: GROUND LINES

All fences have an anticipated speed depending on terrain, direction of approach, profile of jump, etc. The average take- off point is directly related to the anticipated speed and height of the leading edge of the jump.

Ground Lines are intended to help horses read the fence and identify the leading edge. Ground lines should be used to improve the profile of fences and to prevent horses from getting too deep to the fence.

Ground lines can be rails, mulch, flowers, pine, straw, woodchips, plants, etc.

There should be no grass/dirt between the ground line and front of the fence, where the horse might put a leg down in front of the fence.

The groundline is part of the overall base spread dimension if it is solid and should not exceed the maximum base spread according to Equestrian Canada D Rules for Eventing. Mulch and flowers are not part of the spread dimension.

False groundlines should never be used.

Section 12 COMBINATIONS AND RELATED DISTANCES

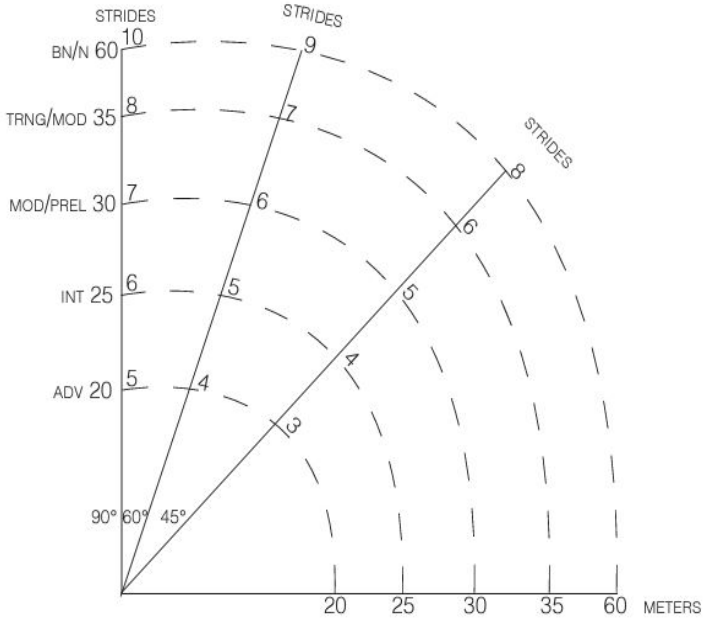
Combinations of four strides or less should be on a true distance. A true distance relates to the average strides a horse would take between elements. The Course Designer and Technical Delegate both should be in agreement that the average horse should arrive at a related fence on a normal stride from the previous fence, not a half stride. There are numerous factors that will determine the true distance including the slope of the land (uphill, downhill, flat), the profile of the fences (upright vs steeplechase style fence), the likely speed of approach to the fence (coming from a gallop across flat (terrain as opposed to coming off a turn).

At EV105 and above all four stride combinations are jumped at approximately 400-450 metres per minute (mpm). As the distance controls the length of the stride and speed, Course Designers should understand that at 300 mpm, the horse will take a shorter stride and at 500 mpm a longer stride. Therefore, the anticipated speed of approach is critical at every related distance.

BENDING LINE COOMBINATIONS

The diagram in this section is a guide to the recommended number of strides between elements with top spread at different angles between fences. This is intended to help with the flow of bending lines so that horses are not pulled about between fences.

It is accepted that horses take a slightly shorter stride on a bending line than when they are on the straightaway.



APPROACH

- Upslope: easier for a horse to jump.
- Downslope: more difficult for a horse to jump so the height of a fence on a downslope should normally be 5cm below maximum.
- Straight: more difficult for the competitor to balance the horse.
- Off a turn: easier for the competitor to balance the horse.

The length of a horse's stride will tend to lengthen on a gentle downslope; therefore, those fences will need a larger groundline.

The length of a horse's stride on a gentle upslope will tend to shorten the horse's stride, therefore, those fences will need less ground line.

The faster the anticipated approach, the longer the horse's stride. See *Ground Lines.*

With a steep slope up or down the horse's stride will shorten. The switchover must be a discussion between the Course Designer, Technical Delegate, and Ground Jury when looking at related distances and the size of ground lines.

BOUNCE COMBINATIONS:

Not permitted in the EV100 division and below.

EV105: except for small steps down, bounce combinations are not acceptable.

Specifications for bounce combinations at the EV110 division and above are outlined in the EC Rules for Eventing Annex 1

Section 13: FENCES

These guidelines include information and specifications of fences that are appropriate for each level/division. Fences that may be designed that fall outside this guide should be fair, as safe as possible, and of the right standard for the level of the competition. If a Course Designer wishes to build a fence that is not listed in these guidelines – the Course Designer should consult / discuss with an FEI Level 3 or 4 Eventing Course Designer as well as the Technical Delegate of the competition and prior to commencing construction.

UPRIGHT/VERTICAL

Vertical fences are inappropriate for EV85, EV90, EV100. All uprights EV105 and above should be frangible when possible.

OXERS

For all levels up to EV120, the back rail should be clearly visible from the front rail.

At all levels there should be a visual contrast between the front and back rails.

It is recommended to use the Frangible Technology- MIM Clip on the front rail and the Reverse Pin or MIM clip on the back rail for EV100 and above.

Note: Both front and back can be reverse pinned if built according to MIM installation directions and the log can fall. https://inside.fei.org/fei/disc/eventing/risk-management/devices

BANKS (STEP UP/STEP DOWN)

Appropriate for all levels.

The height of the step up onto a bank should be at least 10cm below the maximum at all levels.

- EV85 should have a minimum of three strides across the top.
- EV90 should have a minimum of two strides across the top.
- EV100 and EV105 should have a minimum of one stride across the top.
- EV115 and above should have a minimum of 5.4 metres across the top.

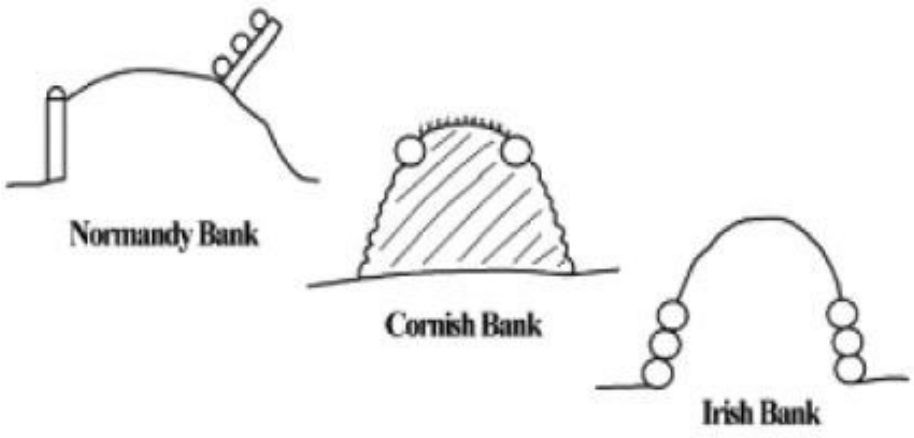
BANKS (CORNISH, IRISH AND NORMANDY)

Not appropriate for EV85, EV90, EV100.

If a Cornish Bank can be jumped in one effort, the rails need to be within maximum dimensions.

An Irish Bank must have a retaining wall (wood or stone) on both sides. This should be approximately 60-75 cm as the exercise is to jump up on to the face of the bank, take a stride(s) over the top and jump off.

A Normandy Bank has a step (see steps) and then a bounce (2.7 m to 3.3 metres) for EV120 only, and a one stride 5.4m to 6 m for EV105, EV110, EV115.



BENCH/SEAT

Appropriate for all levels.

The seat should be no more than 1/3 the height of the fence and the depth of the seat, from the front of the seat to the front of the top should not exceed 2/3 of the height.

BRUSH BOX/FRAME

Appropriate for all levels

The height of the brush box should be 10cm below maximum at the front and 15cm at the back.

At all levels 25-30 cm of brush is recommended above the height of the box/frame. Brush Frame is always safer as the back of the frame is lower than the front, not allowing a horse to slide a leg into the frame.

BULLFINCH

Not appropriate for EV85, EV90.

The height of the box (frame) is the same as for a normal brush fence.

The see-through brush should be approximately 60-90 cm higher than the brush and must be of only token thickness for EV100 - EV110.

CABIN FEEDER ROOF SHAPE

Appropriate for all levels.

The slope on the roof should be approximately 45 degrees.

A roof shape with a question beyond (water, ditch, step, drop etc.) should have a short back such as 50% of the depth compared to the front.

COFFIN

EV85 may have a half coffin with a fence before or after the ditch

The height of the element before the ditch should be 5cm below the maximum for all levels.

The height of the element after the ditch should be maximum for all levels on flat ground

The ditch should be 45 cm deep

EV85 and EV90 minimum 3 strides

EV100 minimum 2 strides.

Distances will vary with slope down or up. Slope down will be longer, slope up will be shorter.

CORNERS

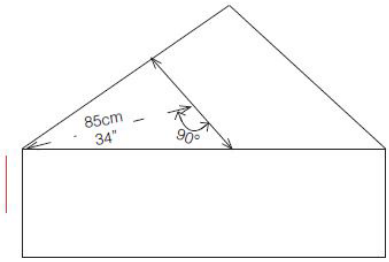
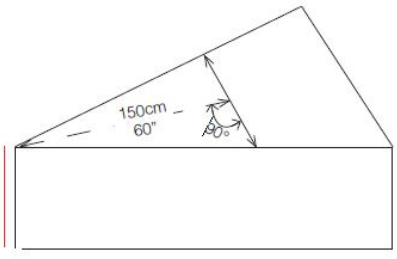
Appropriate for all levels.

All levels should have a ground line. All EV85 through EV105 corners should be decked in.

The face of the obstacle is ascending and is solid in appearance.

At EV85. EV90 and EV100 levels, the top spread of a corner should be measured at 90 degrees to the bisecting angle.

The back of the corner should be clearly visible.

	
EV105, EV110, EV115, EV120	EV100, EV90, EV85

Level	**Degree of Angle**	**Top Spread**
EV85	15-20 degrees	150cm
EV90	20-30 degrees	150 cm
EV100	30-40 degrees	150cm
EV105	40-45 degrees	85cm
EV110	45-55 degrees	85cm
EV115	55-65 degrees	85cm
EV120	70-80 degrees	85cm

The top spread of a corner at EV85, EV90 and EV100

should measure within 150cm from the apex of the corner.

The top spread of corners at EV 105, EV110, EV 115 and EV 120 should measure within 85cm from apex of the corner when jumping the bisecting line at 90 degrees.

DITCH BRUSH

Appropriate for all levels.

The height of the brush box frame should be 10cm below the maximum at the front and 15cm at the back.

At all levels 25-30 cm of brush is recommended above the box/frame. It is recognized that there is less risk to the horse with brush in a frame as opposed to brush in a box if the horse ends up in the ditch.

EV85 and EV90 can have a scoop to create an insignificant 30-45 cm ditch behind a takeoff rail.

For EV100 and above, the ditch should be 60 cm deep and 4.2- 4.8 metres long.

A base spread 30 cm below maximum is recommended. This measurement must include the frame or structure of the jump and the rail at takeoff.

For a Weldon's Wall the base spread should never be more than two- thirds maximum.

DOUBLE BRUSH:

Appropriate for all levels.

The height of the brush box should be 10 cm below maximum at the front and 15 cm at the back.

The height of the brush at the front should be 5 cm lower than the back.

All boxes should be decked.

TRIPLE BRUSH

EV85 and EV90 are normally two brushes not three.

Minimum dimensions:

Level	**Width**		**Height**		**Back Spread**
	Front	**Back**	**Front**	**Back**	
EV100	1.1 m	2.4 m	45 cm	85 cm	1.05 m
EV105	75 cm	2.1 m	45 cm	95 cm	1.2 m
EV110	75 cm	1.8 m	45 cm	1 m	1.4 m
EV115	60 cm	1.6 m	45 cm	1.05 m	1.4 m
EV120	45-60 cm	1.4 m	45 cm	1.1 m	1.8 m

ELEPHANT TRAP

Appropriate for all levels.

The highest point of the rail must not be further back than ¾ of the way across the base spread.

HELSINKI:

Not appropriate for EV85.

The height in the middle of each section should be 5 cm below maximum.

Level	Jumpable Width
EV90	Not less than 3.5 metres
EV100	Not less than 3.5 metres
EV105	Not less than 2.4 metres
EV110	Not less than 2.1 metres
EV 120	Not less than 1.5 metres

KEY HOLE

Not appropriate for EV85, EV90, EV100

Solid box – see Brush Boxes

Top Spread is not recommended but should never be more than 50% of maximum.

Level	Size of hole Diameter
EV105	2.25 Metres X 2.25 Metres
EV110	2.1 Metres X 2.1 Metres
EV115	2.0 Metres X 2.0 Metres
EV120	1.8 Metres X 1.8 Metres

There should be 60 cm of brush between the top of the aperture and the solid part of the frame.

LOG PILE

Appropriate for all levels.

NARROWS

Appropriate for all levels

Level	Minimum Jumpable Width
EV 85	2.80 M - 3.00M
EV90	2.40 M - 2.60M.
EV100	2.10 M- 2.30M
EV105	1.90 M - 2.00 M
EV110	1.65 M - 1.80 M

EV115	1.50 M - 1.65 M
EV120	1.40 M - 1.50 M

Narrows jumped on a bending line or at an angle should follow the wider end of the range. When a narrow is jumped from a straight approach or with a brush shoulder the jump can be at its narrowest.

OPEN DITCH

Appropriate for all levels.

Inside measurement.

Level	**Inside Width**
EV85	1.4 Metres
EV90	2.0 Metres
EV100	2.0 Metres
EV105	2.4 Metres
EV110	2.8 Metres
EV115	3.2 Metres
EV120	3.6 Metres

All ditches other than EV85 should be approximately 60 cm deep.

PALISADE/RAMP

Appropriate for all levels.

The slope of all palisades/ramps should be not less than 45 degrees or more than 60 degrees.

PICTURE FRAME

Not appropriate for EV85, EV90

The height of the solid part should be 2.5 cm below maximum.

Level	**Minimum Aperture**
EV100	2.4 Metres x 2.4 Metres
EV105	2.25 Metres x 2.25 Metres
EV110	2.1 Metres x 2.1 Metres
EV115	2.0 Metres x 2.0 Metres
EV120	1.8 Metres x 1.8 Metres

ROOFS

Not appropriate for EV85, EV90, EV100

- A fence under a roof should be no less than 2.5 cm under maximum and if a table the front should be 5 cm lower again.
- The fence under a roof should not have more than 50% maximum top spread.
- The "eve" of the roof should be a minimum of 3.35 Metres from the ground.
- Never use in association with water.
- Use pale colours if fence is shaded.

ROUND TOP

Appropriate for all levels.

SHARKS TEETH

Appropriate for all levels.

STEPS

Appropriate for all levels.

- At all levels the height of a step up should be 10 cm below maximum.
- EV85 a maximum of two steps with a minimum of three strides (13.7 m) between.
- EV90 a maximum of two steps with a minimum of two strides (10 m) between..
- EV100 a maximum of two steps with a minimum of one stride (6.4 m) or more.
- EV105 should have 1 stride (6.4 m) between steps.
- EV110 and above can introduce a bounce (2.7-3.0 m) between steps.

Three steps up with a bounce are not recommended at any level.

At any step combination, if the ground rises slightly between the steps it helps the horse read the question.

SUNKEN ROAD

Not appropriate for EV85 and EV90.

- EV100 and EV105 may have a sunken road, that is a step in or out or a ramp in or out. In both cases a fence should not be less than 9 metres before the step or ramp and not less than 9 metres after the step or ramp, and not less than 9 metres between the step and ramp and should always be on flat terrain.
- EV110 cm may have step in and out with 6.4 metres between steps and a fence 5.4 metres before and after the second step.
- EV115 may have step in and out with 6.2-6.4 metres between steps with a fence no less than 5.4 metres before and after the second step.

- EV120 may have steps in and out with 5.8-6.7 between steps, with a fence 3.05-3.6 metres or 5.4 after the second step.

At all levels, rail or logs are best so that the horse can see through them and understand the question better.

All distances are “inside distances”.

The height of the first element should be 5 cm below maximum.

The height of the last element should be maximum.

Height of steps – see steps.

At all levels distances should be adjusted for up slope (shorter), downslope (longer) and longer where the step up is smaller.

TABLE

Appropriate for all levels.

All levels must have either a sloped or rounded leading edge of approximately 45 degrees to a point 20 cm below the top of the table at the front.

Where the leading edge is less than 20 cm below the height of the obstacle, that too should have a sloped or rounded edge.

The back of the table must be clearly visible.

TRAKEHNER

Appropriate for all levels.

EV85 and EV90 should have a shallow scoop ditch under. EV100 and above can have a riveted ditch that must not be more than 60 cm deep.

Maximum base spread is not recommended at any level. Base spread should be proportional to the size of the log (bigger log = more base spread, small log = less base spread).

At all levels the take-off should be defined by a prominent ground line or leading edge.

WATER

Appropriate for all levels.

EV85 and EV90 – see EC Eventing Rules.

Level	Maximum Drop into Water
EV100	81 cm
EV105	1.16 m
EV110	1.40 m
EV115 and EV120	Maximum can be used if used with brush.

Water crossings should be a minimum of 9 metres across. Depth of water 15 – 25 cm

Any fence in water is appropriate for EV100 and above and should have a minimum of 6 metres of water before and should be 5 cm below maximum height. A round shape is preferable but never more than 50% maximum top spread.

Where there is a jump into water and a riveted step out, the step must be not less than 14 metres after the fence in.

All steps out of water should have a ground line.

Fences after a step out of water:

Level	Minimum of Metres
EV100	9.00 Metres
EV105	5. 50 Metres
EV110	5.50 Metres
EV115-EV120	2.75 – 3.70 Metres

All distances need to be proportional to the height of the step, smaller step = more distance, larger step = smaller distance.

ZIG ZAG WITH OR WITHOUT DITCH

Not appropriate for EV85, EV90, EV100 or EV105

Total width of face should not be less than 4.85 metres.

The angle of the rails should be shallow for EV115.

If with ditch, the base spread should be at least 2.5 cm below maximum.

Section 14: DIMENSIONS OF OBSTACLES

Please refer to Annex 7 Cross Country and Jumping Test Specifications - EC Rules for Eventing

Section 15: ADDITIONAL IMPORTANT RESOURCES

FEI Cross Country Guide for Officials: *https://inside.fei.org/node/3822/*
https://inside.fei.org/sites/default/files/Cross%20country%20Guide%20for%20Officials%2024%20January%202024%20Mark-up_0.pdf

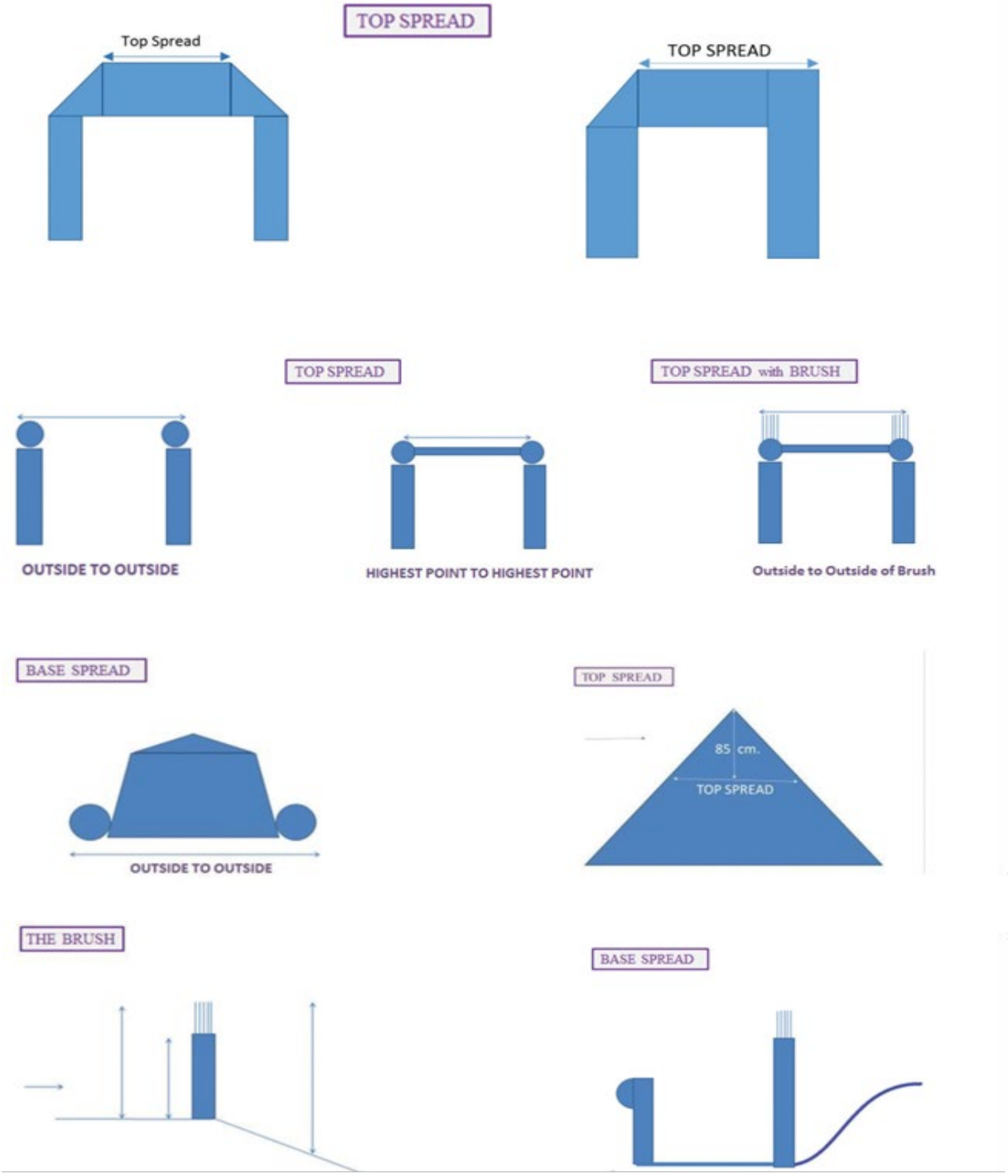
Equestrian Canada Rules for Eventing: https://equestrian.ca/news-info/forms-and-documents/?resource-category=ec-rules&sports-category=eventing

FEI Risk Management: https://inside.fei.org/fei/disc/eventing/risk-management

Frangible Technology Information: https://inside.fei.org/fei/disc/eventing/risk-management/devices

Section 16: APPENDIX 1 - ILLUSTRATION OF MEASUREMENT OF FENCES

From the FEI Eventing Cross Country Guide for Officials

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