

PENTATHLON GB⁺

Effective from 1 June 2017 - Author: Pentathlon GB - Modern Pentathlon is an Olympic Sport

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GENERAL ASPECTS:

This document should be read in addition to Pentathlon GB's Modern Biathlon, Laser-Run, Triathlon, Tetrathlon and Pentathlon 2017 Competition Rules. Separate Technical Equipment Regulations are more practical and can respond to any necessary innovation or safety updates regarding equipment.

1. SWIMMING:

2.1 Swimwear:

2.1.1 The swimwear (swimsuit, cap and goggles) of all athletes in all competitions shall be in accordance with the FINA General Rules and Bylaws on swimwear, in force on the date of the competition.

2.1.2 All swimsuits must be non-transparent, in good taste and suitable for the swimming discipline.

2.1.3 The athlete must wear only one swimsuit in one piece (men) and one or two pieces (women). No additional items, such as arm bands or leg bands shall be regarded as parts of a swimsuit. No zipper or other fastening system is allowed.

2.1.4 Swimwear for men shall not extend above the navel nor below the knee and for women, shall not cover the neck, extend past the shoulder, nor shall extend below the knee. All swim suits must be made of textile materials.

2.1.5 Swimmers are not permitted to use or wear any device that may aid their speed, buoyancy or endurance during a competition (webbed gloves, flippers, fins etc). Goggles and caps may be worn.

2.1.6 Any kind of tape on the body is not permitted unless approved by the Swim Director.

2.1.7 The penalty for not being correctly dressed, using tape on the body without approval, using devices to aid speed, buoyancy or endurance is 10 points. The referee will require that the athlete change into clothing that complies with the Regulations.

2.1.8 The referee may exclude and eliminate any athlete unable or unwilling to comply with the above Regulations.

2.2 The pool:

2.2.1. At the British Championships, the pool must be 25m or 50m long. When touch panels for electronic timing equipment are used on the starting end, or additionally on the turning end, the pool must be of such length that it ensures the required distance of 25m or 50m between the two panels. There must be a minimum of 1.35m depth at the starting blocks.

2.2.2. The minimum number of lanes in a pool of 25m must be 6 and a pool of 50m must have 8 lanes. speed, buoyancy or endurance is 10 points. The referee will require that the athlete change into clothing that complies with the Regulations.

2.3 Starting Blocks:

The height of the starting blocks above the water surface may be from 0.5m to 0.75m. The surface area must be at minimum 0,5m x 0,5m. The surface must be covered with non-slip material. The maximum slope is 10 degrees. The starting blocks must be clearly numbered. Lane No1 is on the right side of the pool, when facing the water from the start top. speed, buoyancy or endurance is 10 points. The referee will require that the athlete change into clothing that complies with the Regulations.

2.4 Water Temperature:

The pool should have a temperature of 25-28°C During the competition, the water in the pool must be kept at a constant level, with no noticeable movement.

2.5 False Start Rope:

A false start rope should be hung across the pool not less than 1.20 metres above the water level from fixed points placed 15 metres in front of the starting end.

2. FENCING:

3.1 Clothing:

3.1.1. All athletes must be correctly dressed and protected in fencing kit at the appropriate minimum standard – see Regulation 3.2.

3.1.2. Before the start of the bout, hair must be secured and placed inside the clothing and/or mask in such a way so as not to obscure the name printed on the Jacket (if applicable).

3.1.3. No jewellery or any visible body piercings are permitted.

3.1.4. The clothing must provide the athlete with the maximum protection compatible with the freedom of movement necessary for fencing. The clothing must be made of sufficiently robust material and be clean and in good condition.

3.1.5. The material from which the equipment is made must not have a surface that is smooth enough to cause the point d'arrêt, the button or the opponent's hit to glance off it.

3.1.6. There should be no gaps or holes in the clothing when worn. Particular attention must be paid to the area under the arms.

3.1.7. The clothing may be of different colours, but the Jacket must be of a single colour - white or a light shade.

3.1.8. Failure to wear clothing that complies with the Rules will incur a penalty. The Officials making the preliminary checks at Equipment Control and/or the referee will request that the athlete change into clothing that complies with the Rules.

3.1.9. The Fencing Director and Fencing Referee have the authority to exclude and eliminate any athlete unable or unwilling to change into clothing that complies with the Rules.

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3.2 Standard of Fencing Kit:

23.2.1. The highest standard of safety for equipment is established by the UIPM Rulebook. This and the FIE Rulebook clearly define required safety standards for all international competitions. For all International, Pentathlon GB Junior, Senior and Youth selection competitions and British Junior and Senior Championships combined with Pentathlon GB selection competitions, athletes must meet the following minimum standards:

Fencing Jacket - 800N (CE Level 2)

Fencing Breeches - 800N (CE Level 2)

Protective Under-plastron - 800N (CE Level 2)

Mask - Bib 1600N (CE Level 2).

Glove – CE Level 1

Whatever your level, if you are buying new equipment, we strongly advise that it meets the standards above.

3.22 For British Championships (other than the British Junior and Senior Championships when combined with Pentathlon GB Selection Competitions) and Regional competitions conducted under Pentathlon GB Rules the minimum standards are :

Fencing Jacket - minimum 350N (CE level 1)

Fencing Breeches - minimum 350N (CE Level 1)

Protective Under-plastron - 800N (CE Level 2)

Mask - Bib 350N (CE Level 1).

Glove – CE Level 1

Pentathlon GB strongly encourages you to use the higher standard equipment.

3.3 The Jacket:

3.3.1. Jackets should be of the correct length, correctly fitting and fastened on the opposite side to the sword arm, or at the back. The jacket must cover the whole of surface of the trunk. The lower edge of the jacket must overlap the breeches by at least 10cm when the athlete is in the on-guard position. The jacket must include a lining which makes a double thickness of material for the sleeve down to the elbow of the sword arm and covering the flank up to the region of the armpit.

3.3.2. An under-plastron resistant to 800 Newtons which covers the vital upper areas of the body is obligatory.

3.3.3. Female athletes must wear chest protectors made of a rigid material or metal.

3.3 Breeches and Socks:

3.4.1. The breeches must be fastened below the knees.

3.4.2. The athlete must wear socks that cover the legs right up to the breeches. These socks must be held up in such a way that they cannot fall down.

3.3.2. An under-plastron resistant to 800 Newtons which covers the vital upper areas of the body is obligatory.

3.3.3. Female athletes must wear chest protectors made of a rigid material or metal.

3.5 The Glove:

3.5.1. The gauntlet of the glove must, in all circumstances, fully cover approximately half the forearm of the athlete's sword arm to prevent the opponent's blade entering the sleeve of the jacket.

3.5.2. The gauntlet of the glove must not be covered by material that can cause the point to glance off it.

3.6 The Mask:

3.6.1. The mask must be made with a wire mesh with a maximum space between wires of 2.1mm and a minimum gauge of 1mm diameter.

3.6.2. The mesh must withstand, without permanent deformation, the introduction into the mesh of a conical instrument, the angle of the surface of the cone being at 4° to the axis and the pressure of 12kg.

3.6.3. The mask must contain two different safety systems at the rear of the mask, with two ends of the straps of the system firmly affixed to the two sides of the mask. (see Figure 8).3.6.4. The mask must not be covered, in whole or in part, by material that can cause the point to glance off it.

3.6.5. The mask must be so shaped that the bib reaches below the prominence of the collarbone (clavicle).

3.6.6. The bib must protect the neck area and must not expose any gap.

3.6.7. A mask which does not comply with the safety requirements laid down in this Rule will be visibly rendered unusable by the weapon checking personnel.

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3.7 The Body wire:

- 3.7.1. Each Athlete must have two working body wires. Failure to meet this requirement will result in a penalty.
- 3.7.2. The conductive wires of the body wire as part of the athlete's personal equipment must be well insulated from each other, insensitive to humidity and either joined or twisted together. The maximum electrical resistance allowed for each of these conductive wires from plug to plug is 1 ohm.
- 3.7.3. The body wire must have a connecting plug on each end. At the spool end, a three pin male plug must be connected to the wire as follows:
 - 3.7.3.1. The pin 15mm from the centre pin to whichever wire is most directly connected to the point d'arret;
 - 3.7.3.2. The centre pin to the other wire of the epee;
 - 3.7.3.3. The pin 20mm from the central pin to the epee's earth circuit and to the conductive piste.

3.8 The Epée:

- 3.8.1. Each Athlete must have at least two working épées. Failure to meet this requirement will result in a penalty.
- 3.8.2. Under 13 Athletes must compete using size 2 épées except when fencing in a common pool with an older age group where they may use either a size 2 or size 5 épée.
- 3.8.3. A homologation mark must be shown on the blade showing the identification of the manufacturer, the date of manufacture and the FIE or UIPM logo.
- 3.8.4. The maximum length of blade for a size 2 epee is 82.5 cm.
- 3.8.5. Under 15, Under 17, Under 19, Junior, Senior and Masters Athletes should compete using size 5 épées as defined in the following subsections.
- 3.8.6. The total weight of the épée ready for use must be less than 770grams.
- 3.8.7. The total maximum length of the épée is 110cm.
- 3.8.8. The blade, which is triangular in section, without cutting edges, is made of steel and must comply with safety standards.
- 3.8.9. There are two methods of manufacture (see Figure 2):
 - 3.8.9.1. By forging a steel cylinder (Cross – section of blade, A);
 - 3.8.9.2. By folding a sheet of steel (Cross – section of blade, B).
- 3.8.10. The blade should be straight as possible and be mounted with the groove uppermost. Any curve of the blade must be uniform and the maximum bend must be less than 1cm; it is only permitted in the vertical plane and must be near to the centre of the blade.
- 3.8.11. The maximum length of the blade is 90cm and the maximum width of any of the 3 sides of the blade is 24mm.
- 3.8.12. The blade must have a flexibility equivalent to a bend of 4.5 cm minimum and 7 cm maximum, measured in the following way:
 - 3.8.12.1. The blade is fixed horizontally at a point 70 cm from the extremity of the button.
 - 3.8.12.2. A 200grams weight is suspended 3 cm from the extremity of the button.
 - 3.8.12.3. The bend of the blade is measured at the extremity of the button between the non-weighted and the weighted position (See Figure 2).
- 3.8.13. Treating a blade between the guard and the tip (button) by grinding, filling or other methods, is forbidden. Sharpening the edges or angles of the point is forbidden.
- 3.8.14. Suspect blades must not be used.

3.9 The Electric Wires:

- 3.9.1. The épée has 2 electrical wires, glued in a groove in the blade, which connect the button of 2 of the 3 sockets situated inside the guard and which forms the active circuit of the épée. The body of the épée is connected to the third socket.

3.10 The Guard

3.10.1. The convex face of the guard must be of a shape and surface that is both smooth and not too bright. It must be made in such a way that it can neither hold nor catch the opponent's point. It must not have a raised rim. The guard, which must have a circular edge, must be able to pass through a cylindrical gauge having a diameter of 13.5cm and a cylindrical length of 15cm, the blade being parallel to the axis of the cylinder. The depth of the guard (the distance between lines 'b' and 'c') must be between 3 and 5.5cm.

3.10.2. The total length between lines 'a' and 'c' must never be greater than 95.5cm. Eccentric mounting is allowed provided the distance between the centre of the guard and the point where the blade passes the guard does not exceed 3.5cm.

3.10.3. Inside of the guard there must be a cushion (padding) of sufficient width to protect the electric wires from the athlete's fingers. The padding on the inside of the guard must be less than 2cm thick and must be arranged in such a way as not to increase the protection that the guard affords the hand. The connections must be so arranged that it is impossible for the athlete to break or make contacts while fencing.

3.10.4. The two wires must be protected by insulating sheaths, one on each wire. Both the wire and insulating sheaths must go right up to the socket. In no case may non-insulated wires project beyond the point where they are attached to the socket.

3.10.5. Any system of attachment inside the guard is allowed, provided that it conforms to the following requirements:

3.10.5.1. It must be easy to detach or attach the body wire;

3.10.5.2. It must be possible to check it by a simple method such as using a penknife or a knife;

3.10.5.3. It must be easy to apply the point d'arrêt of the opponent's weapon to the earth circuit connected to the blade;

3.10.5.4. It must have a security device, which makes it impossible for the contact to be broken during the bout;

3.10.5.5. It must ensure the complete connection of the electric wires; it must be impossible for even a momentary break of contact to occur while the plugs are connected;

3.10.5.6. It must not include any part that allows an electrical contact to be made between the plug sockets.

3.10.6. The maximum electrical resistance allowed for an épée is 2 ohms.

3.10.7. Those who wish to assemble electric weapons, but who are not equipped to undertake electrical tests, are advised that the limits for the electrical resistance for the circuits laid down for each weapon have been fixed so that they can be attained by anyone who is reasonably careful. They are advised:

3.10.7.1. To thoroughly de-oxidise the external surface of the guard and the connecting surfaces inside it;

3.10.7.2. Not to destroy the insulation of the wires, especially where they pass along the groove in the blade at the point and at the guard;

3.10.7.3. To avoid accumulation of glue in the groove of the blade.

3.11 The Pointe d'Arrêt and the Button:

3.11.1. The electric button is completed by a pointe d'arrêt that must conform to current standards. Only traditional or homologated points d'arrêt are acceptable.

3.12 Method of Fixing the Button:

3.12.1. The base of the button may be made in one piece with the blade or the flattened piece of the tip of the blade retained. The button must be screwed onto the end of the blade, which must be cut and threaded for this purpose, under the following conditions:

3.12.1.1. Normally, only fixing by metal-to-metal to the end of the blade is allowed. Fixing by insulating material is forbidden.

3.12.1.2. Any method of soldering or brazing or any heating in general that may affect the temper of the blade is forbidden. Only a solder of very easily melted tin used with a soldering iron to prevent the tip from coming loose is authorised.

3.12.1.3. The end of the blade before cutting the thread must not have a diameter at any point of less than 4mm, and this without anything being wrapped around it, a process which is strictly forbidden.

3.12.1.4. The diameter of the core of the thread must not be less than 3.05mm (thread SI. 4.0 × 0.70).

3.13 The Grip:

3.13.1. The maximum length of the épée's grip is 20cm, measured between lanes 'b' and 'e', and 18 cm between the lanes 'b' and 'd'. (See Figure 2)

3.13.2. The grip must be able to pass through the same gauge as the guard. It must be made in such a way that it normally cannot injure either the user or his opponent. All types of grips are allowed providing that they conform to the rules, which have been framed with a view to placing the various types of weapons on the same footing. Orthopaedic grips, whether metal or not, may not be covered by leather or any material which could hide wires or switches.

3.13.3. The grip must not include any device that assists the athlete to use it as a throwing weapon. The grip must not include any device that can increase in any way the protection afforded to the hand or wrist of the athlete by the guard. A cross bar or electric socket that extends beyond the edge of guard is expressly forbidden.

3.13.4. If the grip (or glove) includes any device or attachment or has a special shape (orthopaedic) that fixes the position of the hand on the grip, the grip must determine and fix one position only for the hand and grip. When the hand occupies this position on the grip, the extremity of the thumb when completely extended must not be more than 2cm from the inner surface of the guard. It is forbidden to have devices that attach the grip to the hand since this would result in extra strength and possible risk of injury to the opponent. The use of grips such as the gardere or other similar grips is forbidden provided that this does not prohibit the use of the grip conventionally known as the orthopaedic grip.

3.14 The Field of Play:

The field of play should have an even surface. It should give neither advantage nor disadvantage to any athlete especially regarding lighting. The fencing area inside the Field of Play must be restricted to athletes and Judges.

3.15 The Piste:

3.15.1. That portion of the field of play which is using for fencing is called the piste. (See Figure 1.)

3.15.2. The conductive piste (if available) must be made from metal, metallic mesh or some substance with a base that is conductive.

3.15.2.1. The resistance of the piste, from one end to the other, must not exceed 5 ohms.

3.15.2.2. The piste is between 1 ½ metres and 2 metres wide.

3.15.2.3. The piste is 14 metres long, so that each athlete being placed at 2 metres from the centre line is able to retreat a total distance of 5 metres without it being necessary for him to cross the rear limit of the piste with both feet.

3.15.2.4. The piste dimensions used in Regional Championships may be reduced if limited by constraints of the venue.

3.15.3. Five lines should be drawn very clearly on the piste at right angles to its length, as follows:

3.15.3.1. One centre line that must be drawn as a broken line across the whole width of the piste.

3.15.3.2. Two on-guard lines at 2 metres on each side of the centre line. These must be drawn across the whole width of the piste.

3.15.3.3. Two lines at a distance of 7 metres from the centre line must be drawn across the whole width of the piste.

3.15.3.4. The last 2 metres of the piste before these rear limit lines must be clearly distinguished (if possible) by a different colour of piste to make it easy for the athletes to be aware of their position on the piste.

3.15.3.5. If the last 2 metres of the piste is the same colour, the last 2 metres should be clearly marked along the side of the piste with a different colour to the floor.

3.15.4. The conductive piste must cover the whole length and breadth of the piste including its extensions.

3.15.4.1. An extension of 1 ½ metres to 2 metres is added at each end of the piste on which the athletes can retire. The conductive piste must therefore have a total length of 17 to 18 metres.

3.15.4.2. The paint used to draw the lines on the conductive piste must not prevent its electrical conductivity so that a hit made in it at a point where a line occurs is also neutralised.

3.15.4.3. The Competition Organiser should have equipment available if it is necessary to repair the piste.

3.15.4.4. There must be no roller or any sort of obstacle at the ends of the conductive piste, which could prevent the athletes from retreating normally.

3.15.4.5. The table on which the judging apparatus is placed should stand opposite the central lane and at least 1 metre from the piste.

3.15.4.6. One or more pistes should be available as reserve pistes to be used when one or more matches are slower than the rest.

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3.16 Scoring Apparatus:

3.16.1. There should be one central judging apparatus with extension lamps for each piste.

3.16.1.1. Only an electrical apparatus designed with wires connecting the athletes to the central apparatus and registering hits by a light signal with auxiliary sound signals are authorised. The apparatus registers when contact is established between the wires forming the circuit in the épée, thus completing the circuit.

3.16.1.2. The apparatus must register only the first hit that is made. If the interval of time between 2 hits is less than 40 milliseconds (1/25 of a second), the apparatus must register a double-hit. Then both signal lamps must light up simultaneously. When the interval is greater than 50 milliseconds (1/20 seconds) the apparatus must register only one hit. Then only one signal lamp is lit. The tolerance allowed for timing the apparatus is that between these two limits (1/25 seconds and 1/20 seconds).

3.16.1.3. When the external resistance is normal, that is 10 ohms, the apparatus must register hits when these are made with duration of contact of 2 - 10 milliseconds. With one exceptional external resistance of 100 ohms the apparatus must still register a hit, but without any specific duration of contact.

3.16.1.4. The apparatus must not register hits that are made on the earthed material (on the guard or on the conductive piste), even when there is a resistance of 100 ohms in the earth circuit.

3.16.1.5. The apparatus must not register a hit made in the metallic piste or on the metallic parts of the weapon, nor may it prevent the registering of a hit made simultaneously by the opponent.

3.16.2. The apparatus must be based on an electrical supply of 12 volts. The electrical connection on the apparatus provided to connect it to the supply must be so constructed that it is impossible to connect the apparatus by mistake to the general supply (mains). If the apparatus is constructed for use with dry batteries, it must be equipped with a voltmeter or other device whereby the state of the dry batteries can be checked at any time. Nevertheless, the apparatus must always be provided with the electrical connection prescribed above to enable it to be supplied by batteries.

3.16.3. The apparatus must include a warning light to indicate that the apparatus is switched on.

3.16.4. Visual signals include at least 2 signal lamps on each side of the apparatus, so designed that if one lamp does not function it does not prevent the other from lighting up nor cause an excessive current through the latter. The signal lamps should give a red signal on one side of the apparatus and a green signal on the other. The apparatus may include lights that indicate shorts to the earthed circuit; these should be orange in colour. The light bulbs, which show when hits are registered, are usually covered with translucent shades. It must, however, be possible to remove these shades and use the naked lights when the lighting conditions in the locality make it desirable to do so (strong sunlight or, exceptionally, in the open air).

3.16.4.1. The signal lamps must be placed on top of the apparatus in order that they may be simultaneously visible to the Referee on the piste, the athletes and the superintendent of the apparatus. They must be so positioned that they show clearly from which side the hit was made. Arrangements must be made so that extension lamps can be added to the exterior of the apparatus in order to increase the visibility of the signals.

3.16.4.2. However, should there be a difference between the signals given by the lamps on the apparatus and those given by the extension lamps, the signals by the apparatus are decisive.

3.16.4.3. Once the signal lamps are alight they must remain so until the apparatus is reset, without having any tendency to go out or to flicker either when subsequent hits are made or if the apparatus is subjected to vibrations.

3.16.5. The visual signals must be accompanied by an audible sound. For this the apparatus must have a loud sound signal. The resetting switches must be placed either on top of or in front of the apparatus. The apparatus may include a device which allows the sound signal to be stopped before the apparatus is reset.

3.16.6. There must be a source of electrical current (batteries) for each apparatus, and a sufficient number of batteries in reserve.

3.17 Spools:

3.17.1. There should be one spool at each end of every piste plus at least 2 spare spools. Each should have cables and connections for each apparatus.

3.17.2. The maximum electrical resistance of each wire of the spool, measured from socket to socket, must be 3 ohms. There must be no interruption of electrical contact even when the spool is being rotated at full speed. To ensure this, contact rings must have double brushes. The wire connected to the blade of the épée will be connected on the frame of the spool.

3.17.3. The spools must allow 20 m of cable to be unwound without straining the springs.

3.17.4. The socket which terminates the spool cable, and is designed to receive the plug of the body wire plug at the athlete's back, must include a safety device which guarantees that it is impossible to use it unless the plug is correctly put in, that it is impossible for it to become separated during the bout and that it is possible for the athlete to verify that the 2 previous requirements are satisfied.

3.17.5. The resistance of each of the 3 wires in the connecting cables must not exceed 2.5 ohms.

3.17.6. The plugs used to connect the body wire to the spool wire and the connecting cables to the spool and to the apparatus must have 3 pins of 4mm diameter arranged in a straight line.

3.17.7. The body wire and the connecting cables must have plugs, the spool wires and the electrical central apparatus must have sockets to them.

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3.18 Devices and Tools:

The Competition Organiser must provide the equipment, devices and tools to check the clothing and equipment of the athletes as specified in the following and shown in figures 2, 3, 4, 5, 6 and 7.

3.18.1. One gauge allowing measuring the physical dimensions of the weapons, lengths of blades and the depths and diameters of the guards at all weapons to be measured quickly.

3.18.2. Devices for measuring the flexibility of blades, the resistance of the mesh of masks and the total length of the épée.

3.18.3. An electrical checking device to check quickly that the electrical resistance of the point is not too high, and that the bodywire and the weapon are correctly assembled. Devices enabling these measurements to be taken easily are, in fact, commercially available.

3.18.4. Weights of 750 grams supplied by the Competition Organiser to test the pressure of the spring of the points of the épée, in the workshop and at each piste, consists of a metal cylinder drilled part of the way along its axis with a hole parallel to its sides; this hole, into which is inserted the end of the blade, must have an insulating lining to prevent its metallic parts coming into contact with the earthed mass of the épée which might then give a false result to the test. The weight may have a tolerance of ± 3 g, i.e. 747–753 g.

3.18.5. A device allowing the lighting stroke and residual travel of épée points to be accurately measured, in the workshop and at each piste.

3.18.5.1. The Referee will check the total travel and the residual travel of the pointe d'arrêt and the pressure of the spring:

3.18.5.2. He will check the total travel by inserting a gauge measuring 1.5 mm between the barrel of the pointe d'arrêt and the tip. This gauge, provided by the Organizing Committee, may have a tolerance of ± 0.05 mm, i.e. from 1.45 mm to 1.55 mm.

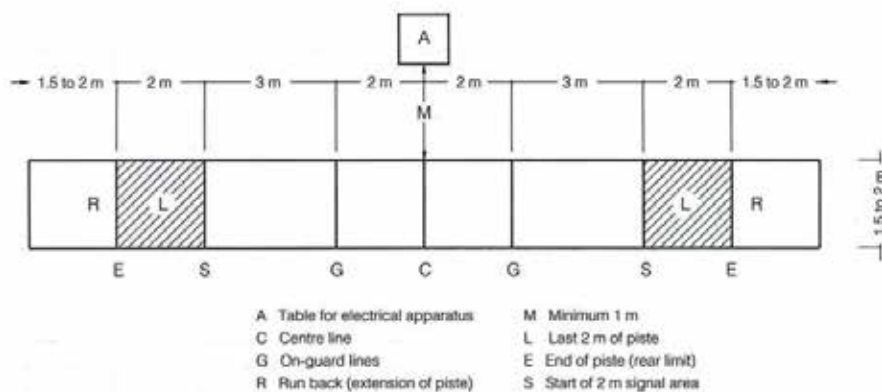
3.18.5.3. He will check the residual travel by inserting a gauge measuring 0.5 mm between the barrel of the pointe d'arrêt and the tip. The apparatus should not register when the point is depressed. This gauge, provided by the Organizing Committee, may have a tolerance of ± 0.05 mm, i.e. from 0.45 mm to 0.55 mm;

3.18.6. Labels to indicate that a weapon has been checked and that it satisfies the regulation, or has been rejected.

3.18.7. A special ink or paint may be provided to mark the guards, blades and points of weapons which have been checked. Nevertheless, those responsible may use other methods to mark the weapons.

3.18.8. Other equipment and tools. The Competition Organiser must be equipped with the sufficient tools to prepare the pistes, the apparatus and the electric connections. The Competition Organiser must also provide tables or supports for the apparatus and 2 chairs in each top of piste.

FIGURE 1. STANDARD PISTE LAYOUT FOR ALL COMPETITIONS:



For foil and épée the conductive surface must cover the whole of the length and breadth of the piste, including its extensions (run back) (cf. Article 1.13s, m.57)

Figure 2. Standard piste for all three weapons

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FIGURE 2. DIMENSIONS AND FLEXIBILITY OF EPEE:

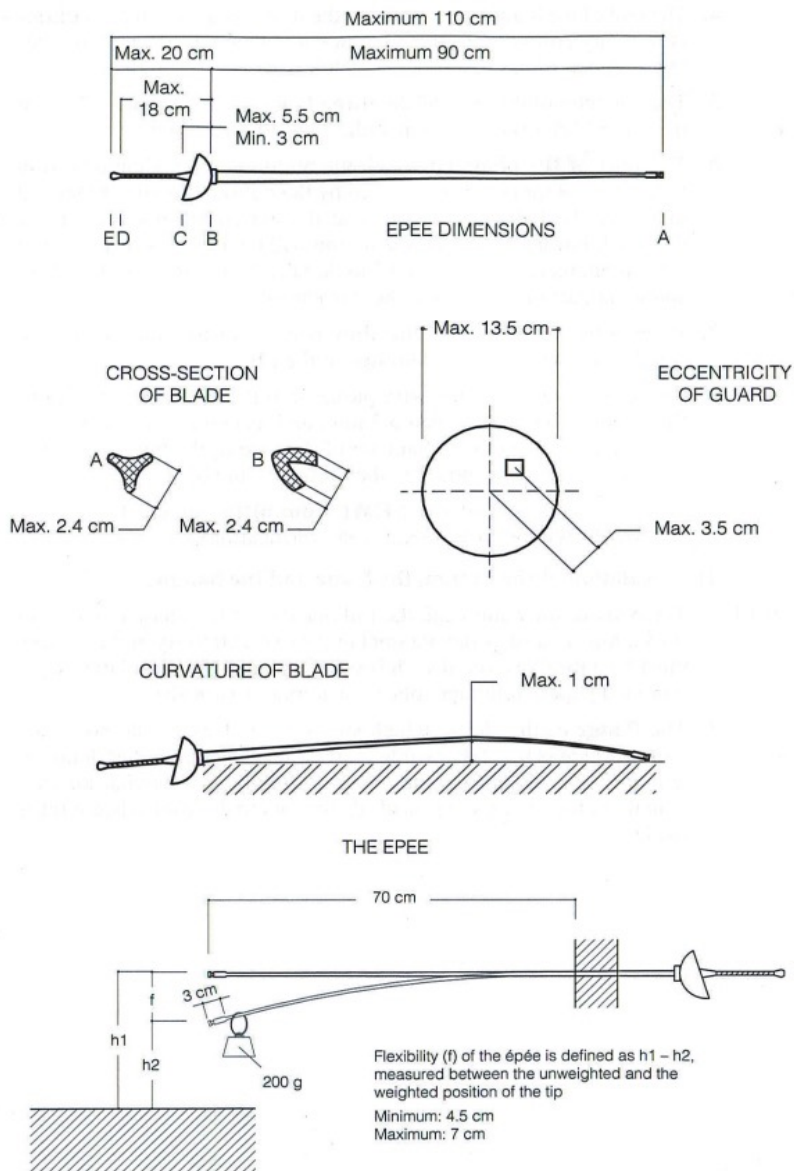
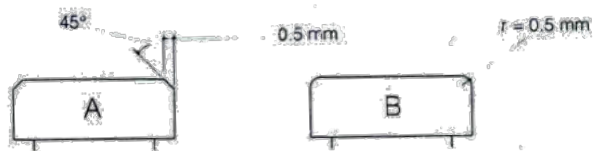


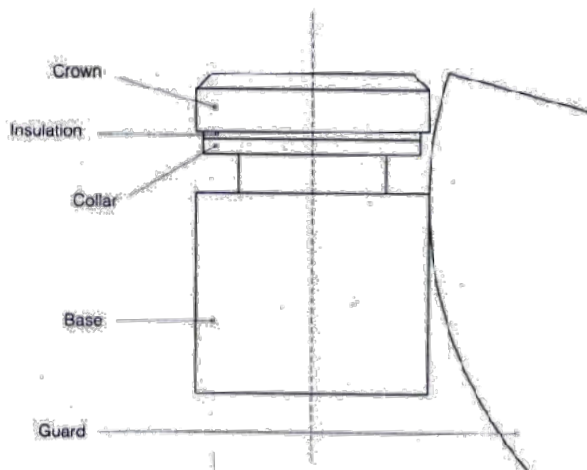
Figure 4. Epee dimensions and flexibility

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FIGURE 3. EPEE – THE POINT D'ARRET AND THE TIP OF POINT:

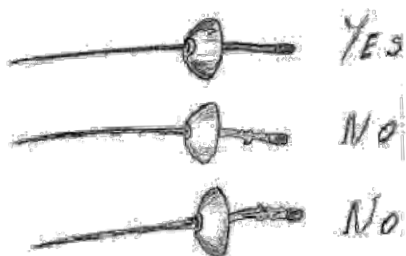


Epee: design of pointes d'arrêt



Epee: details of tip of point

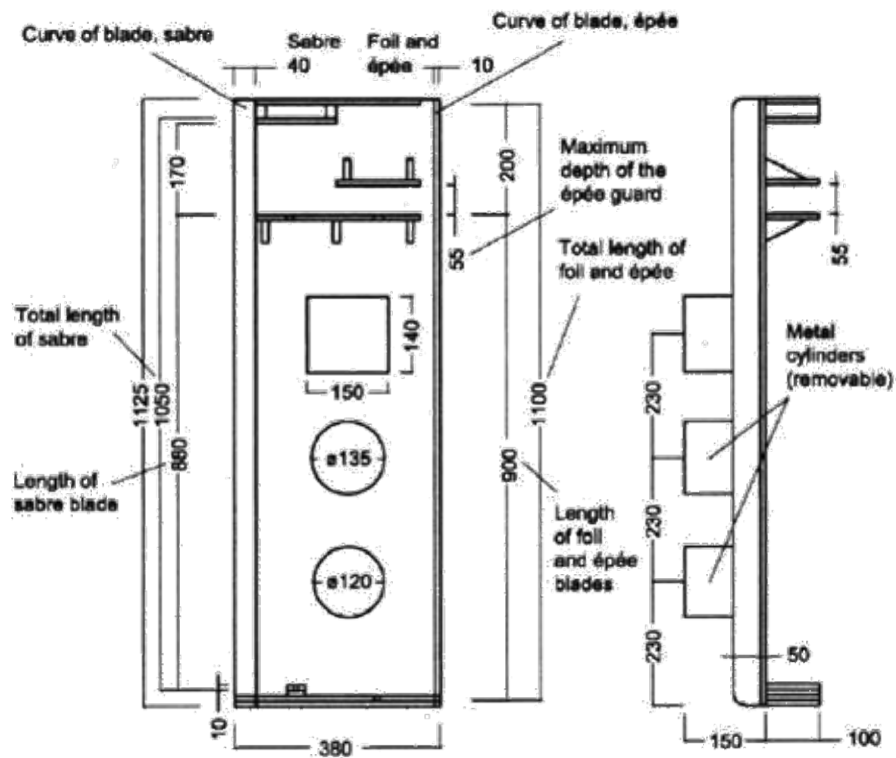
Figure 5: The point d'arrêt and the tip of point



THE GRIP

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FIGURE 5. GAUGE FOR CHECKING WEAPONS:



Dimensions in mm

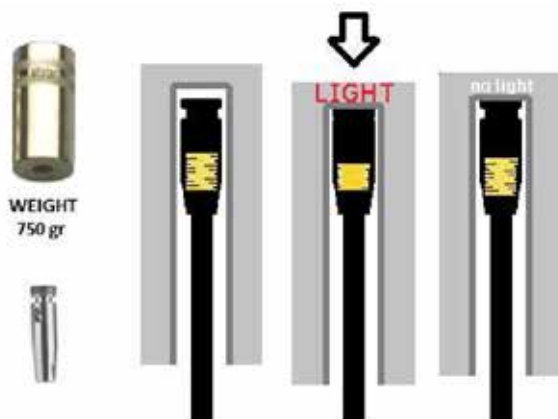


2.4

Gauge to check the eccentricity of epees
(Tolerance = 10/12 mm)

Diameter = 135 mm

FIGURE 6 - THE WEIGHT TO CHECK THE PRESSURE OF THE SPRING OF THE POINT OF THE EPÉE:



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FIGURE 7 - THE POINT TRAVELS CHECK:

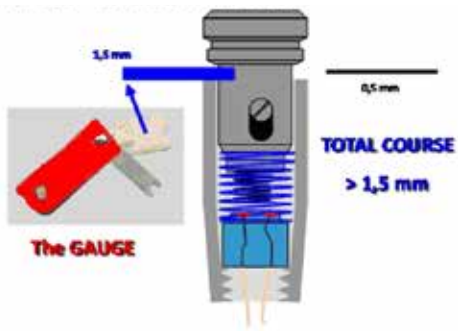


Figure 9a - The Point Travels check

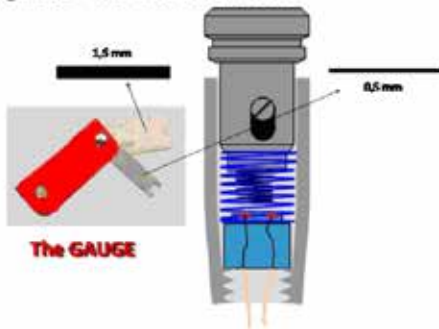
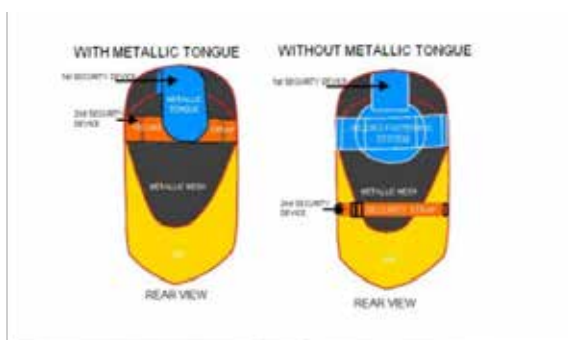


Figure 9c - The Point Travels check



FIGURE 8 - MASK SAFETY SYSTEMS:



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5 LASER-RUN

5.1

Clothing:

- 5.1.1. A competitor must wear athletic clothing that is in good taste and suitable for the Laser-Run.
- 5.1.2. Identification in the form of logos on running clothing i.e. track suits, footwear, officials' uniforms and bags is permitted. The name and the flag of the Country of the competitor or the Country code shall not be regarded as advertisements.
- 5.1.3. Compressed sleeves on the shooting hand, elbow and arm are prohibited. Bracelets, wristwatches, wrist bands or similar items that might provide support are prohibited on the hand and arm holding the pistol.
- 5.1.4. A sports watch is permitted on the non-shooting hand.
- 5.1.5. Team relay members should if possible be identically dressed as far as style and colour of clothing is concerned.
- 5.1.6. The penalty for not being correctly dressed is 10 seconds. The Run Director will request that the competitor change into clothing that complies with the Rules.
- 5.1.7. Sound-reducing devices may be worn, however radios, tape recorders or any type of sound-producing or communication systems are prohibited outside of the warm-up period. Contravening this rule will result in a warning for the first infringement followed by elimination for a second infringement.

5.2

Shoes:

- 5.2.1. Competitors must not compete in bare feet but must wear appropriate footwear on both feet. Shoes must not be constructed so as to give the competitor any additional assistance.
- 5.2.2. Spring devices or an appliance of any kind inside or outside the shoe is prohibited. Only shoes that have not been adapted from a manufactured shoe may be worn.
- 5.2.3. There is no restriction concerning the thickness of the sole.
- 5.2.4. The number and size of spikes is not limited. However, the Organiser may ban the use of spikes or prescribe restrictions concerning dimensions of spikes when the competition is conducted on a synthetic or indoor surface. This will be declared on the entry form or written notice at the competition.
- 5.2.5. The penalty for wearing non-conforming footwear is 10 seconds. The referee will request that the competitor change into footwear that complies with the Rules.

5.3

Numbers:

- 5.3.1. The Competition Organiser is responsible for providing every competitor with at least one start number.
- 5.3.2. The numbers must be worn on the chest and back. They should be properly fastened, clearly visible and easy to read in all weather conditions. If just one number is provided it should be worn on the chest.
- 5.3.3. The competitor or team who is in first place before the combined run/shoot shall be assigned the No. 1, the second-place competitor/team, No. 2, and so on.
- 5.3.4. No competitor will be allowed to take part in a competition without the appropriate numbers.
- 5.3.5. If a competitor modifies the dimensions or appearance of the starting number card (s) given by the organisers, he shall be penalised by 10 seconds.

5.4

The Laser Pistol:

- 5.4.1. Only single shot pistol is allowed without any form of magazine or clip. The shot must be activated by a mechanical trigger (trigger lever movement). Electronical triggers are forbidden but sensors and actuators for activating the emitting of the Laser signal can be used within the pistol
- 5.4.2. The single shot laser pistol must be loaded by a loading lever, which needs to be operated by the non-shooting hand. The loading lever must serve the purpose of loading each (laser) shot. The loading lever must be opened mechanically by hand.
- 5.4.3. The weight of the pistol with all accessories must not exceed 1500 grams. The minimum weight is 800 grams (tolerance 5%), for Youth competitions 500 grams (tolerance 5%).
- 5.4.4. The overall size of the complete pistol is limited to dimensions which permit it to be enclosed completely in a rectangular box with inside dimensions of 420mm x 200mm x 50mm. A manufacturing tolerance of + 1.0mm in the dimensions of the box is permitted. The minimum overall size is 20% of the above dimensions (336mm x 160mm x 40mm) with the same tolerance. In each axes the size of the pistol must be greater than or equal to the minimum dimensions.
- 5.4.5. Only open sights are allowed. Optical mirror, telescope, laser-beam, electronic sights, active lights, activated material (other than by ambient light) or electronically projected dot sights are prohibited. Any aiming device programmed to activate the firing mechanism or to give an indication to this is prohibited. No protective covering is permitted on front or rear sights. There must be possibility of vertical and horizontal aiming correction.
- 5.4.6. No part of the grip or accessories may encircle the hand. The heel rest must extend at an angle not less than 90° to the grip. Any upward curvature of the heel and/or thumb rests and/or downward curvature of the side opposite the thumb is prohibited (see figure 2). The thumb support must allow the free upward vertical movement of the thumb. However, curved surfaces on the grips or frame, including the heel and/or thumb rest (see figures 3 and 4) in the longitudinal direction of the pistol are permitted.
- 5.4.7. Only one laser cartridge/ module per pistol is allowed.

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5.4.8. The laser cartridge must carry the UIPM laser signal of 15.6ms laser signal duration, red colour (635 - 650nm), +/-10nm. The Laser Power must be in the range of 2.5mW – 3.4mW. The barrel time in the range of 6ms and 10ms

5.4.9. The technical specifications concerning the UIPM Laser signal (shot signal) are given in details in the UIPM document “Technical Specifications Laser Shooting” and in the current UIPM Homologation documents.

5.4.10. The following items may be tested at competitions by the Equipment Control Section:

5.4.10.1. Weight and overall size of pistol.

5.4.10.2. Whether the used Laser modules comply with the specified max./min. Laser power.

5.4.10.3. Wavelength of the Laser: 635 to 650nm +/- 10nm

5.4.10.4. The parameters of the embedded and approved UIPM Laser signal, (also called “short Laser signal”).

5.4.10.5. Beam diameter: max. 6mm at 10 m distance.

5.4.10.6. The time the laser beam is released from the pistol, after pushing the trigger, must be between 6ms and 10ms.

5.4.10.7. Wire and radio free;

5.4.10.8. After approval for the competition the change of any setting for that competition period is blocked.

5.4.11. Laser security: The Laser modules used must comply with Laser class 1 (EN 60825-1:2014/IEC 60825-1:2014, and all updates) in view of the UIPM Laser signal 15.6. The providers are responsible for providing a certificate for each type of laser module they have embedded in their pistols and cartridges intended for the use in Modern Pentathlon.

5.5 The Field of Play

5.5.1. The Laser-Run venue is the site on which the Laser-Run competition is conducted.

5.5.2. The course consists of an air pistol shooting range equipped with laser targets, a start/finish area approximately 20m from the first firing point, a running course of 2 or 3 laps of 400m or 800m each, a last penalty stop area, the relay hand-over zone, judges’ and coaches’ area.

5.5.3. The Competition Organiser is responsible for providing an acceptable and safe run/shoot course free of obstacles and spectators. It must be designed so that there is a minimum risk of injury to the competitors; therefore, no sharp turns or steep declines must be included. The course can be laid out on any kind of surface or surfaces.

5.5.4. The start/finish area, shooting range, relay hand-over zone, as well as most of the 400m or 800m running lap should be located on level ground and close together, so as to provide the majority of spectators with a good view of the competition in progress.

5.5.5. These areas and critical parts of the course should be fenced off if necessary, in order to prevent competitors from being impeded or going off course and to prevent access by unauthorised persons.

5.6 The Running Course:

5.6.1. The course should be clearly marked with flags, tape and/or markers above ground level, so that the direction of the course is always obvious to the competitors.

5.6.2. The maximum climb of the course should be no more than 50m. The total climb is measured from a perpendicular angle from the starting area and adding together the total metres of climb from each level.

5.6.3. The first 50m and the last 50m of the course should wherever possible be straight and flat.

5.6.4. The total course must be wide enough to permit two runners to pass each other at any point.

5.6.5. The start and finish should, if possible, be in the same place and must be wide enough to permit the starting/finishing procedures to take place without unnecessary crowding.

5.6.6. The start line and the finish line should be marked by a single line at least 5cm wide the colour of which contrasts with the ground. It is recommended that a gantry (arch, gate, etc.), vertical poles or something similar also mark the start line and the finish line.

5.6.7. The race should (wherever possible) be run in an area that will assist and encourage the access of spectators.

5.6.8. In relay competitions:

5.6.8.1. The start and finish lines shall be a minimum of 5m wide.

5.6.8.2. The hand-over zone shall be 20m long, placed 10m each side of the finish line. Thus, the dimensions of the hand-over zone will be 20m x minimum 5m.

5.6.8.3. The hand-over zone shall be clearly marked by limit lines.

5.6.9. The finish area behind the finish line must be large enough to permit the officials to take care of the competitors having completed the course.

5.6.10. Access to the finish area with the timing device and timekeepers must be suitably restrictive so as not to allow access by competitors, media or spectators. Particular attention must be used on the running shooting zone, to avoid collision between the competitors that enter the running course after the shooting phase.

5.6.11. At least 1 hour before the start of the discipline the course should be marked so that it is possible for competitors to inspect it.

15 minutes before the warm-up is due to start the course should be cleared of competitors and spectators. At least 5 minutes before the start all restrictions preventing competitors and supporters from viewing the course must be removed.

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5.6.11. At least 1 hour before the start of the discipline the course should be marked so that it is possible for competitors to inspect it. 15 minutes before the warm-up is due to start the course should be cleared of competitors and spectators. At least 5 minutes before the start all restrictions preventing competitors and supporters from viewing the course must be removed.

5.7

Shooting Range Requirements:

5.7.1. The range can be indoors or outdoors and must be constructed so that direct sun does not disturb the athletes. The targets should be positioned so that the sun does not interfere directly with the registering of shots on the targets. The targets shall be placed 1m +/- 15 cm apart from each other.

5.7.2. If the venue, the running course and the targets are sufficiently illuminated, the Laser-Run can be organised at night. (Figure 1)

5.7.3. The shooting range must be built in such a way it can guarantee the safety of the athletes, coaches, judges and spectators. The firing distance is 10 metres, measured from the firing lane to the target face. ±0,05m is accepted as tolerance.

5.7.4. With laser pistols no lateral walls and no back wall are required, but access to the range by unapproved people must be prohibited.

5.7.5. If inclement weather is forecast the shooting range must have a roof to protect the athletes from the rain and a waterproof box must be provided to protect the pistols, water, towels and binoculars of the athletes. This should be located under the shooting table.

5.7.6. The shooting range must be prepared in such a way the spectators can enjoy the competition and watch the finish - the finish line should be near the shooting range.

5.7.7. During training, warm up and competition, competitors must enter the range from one side and exit the other side.

5.7.8. The shooting station must be marked with numbers of a minimum height of 12cm, corresponding to the firing point number. Shooting station No. 1 must be the farthest away from the starting gates.

5.7.9. The athletes shooting bay (1m +/- 15cm wide x 1.5m deep minimum) must be clearly defined with visible ground painted lateral lines and a back line (start line for each running leg). The painted lateral lines can be replaced by tape or small advertising banners.

5.7.10. There must be sufficient space (minimum 4m) behind the firing bays to allow the athletes, before and after each shooting series, to run to their shooting bay without disturbing the other athletes and to permit the Range Officials to perform their duties.

5.7.11. Targets must be marked with numbers corresponding to their shooting bay number. The numbers must have a minimum height of 25cm so that they can be easily seen under normal shooting conditions (with normal vision) from the appropriate shooting bay and from the spectator areas.

5.7.12. The Competition Organiser must provide 2 reserve spare targets, numbered S1 and S2. If there are an insufficient number of targets for all the athletes, the Laser-Run can be organised in two or more heats with the athletes competing in the last heat.

5.7.13. The targets and all the other equipment (target numbers, results display, target covers, lights) must be fixed

top

- in such a manner that they have no appreciable movement.
- 5.7.14. The height of the target centre must be within the following height measured from level of the floor of the firing point:
- 5.7.14.1. Standard Height Variation: 1.40m +/- 0.05 m.
 - 5.7.14.2. Horizontal variation: 0.25 m.
- 5.7.15. The firing point must be equipped with:
- 5.7.15.1. A table or bench, about 0.7m – 0.8m high.
 - 5.7.15.2. A soft pad/foam cushion provided by the Competition Organiser (\pm A4 size, 8cm height recommended) to avoid damage to the pistol.
 - 5.7.15.3. The table must have protection for the pistol in the event of rain (waterproof box) or a dry area under the table.
 - 5.7.15.4. With LPT, the shooting bay must be equipped with a waterproof transparent plastic box to protect the feedback device.
- 5.7.16. Athletes shall keep their shooting bay tidy and have only essential equipment on the table. During the actual competition, the shooting table must be cleared of any other items than the pistol of the athlete and the protective pad/foam.
- 5.7.17. An adequate uninterrupted power backup system (UPS System) allowing a minimum of 20 minutes run of the system must be provided by the Competition Organiser if the venue does not have a suitable power supply. The power cable must be 3*2.5mm² section with a waterproof box equipped with a 20A security. This box has to be fixed on the back side of the wall at minimum 0.5m above ground.
- 5.8 Target Requirements:
- 5.8.1. Only targets homologated by UIPM can be used. At the beginning of each season the UIPM publishes a list with the homologation standards.
 - 5.8.2. In a single Laser target application, the Hit and Hit/Miss targets should be able to operate without an external computer.
 - 5.8.3. Front target side minimum 170mm * 170mm. The colour of the target centre zone is black (visible dark from 10m distance). The dimension of this area is 59.5mm, with a tolerance of 0.5mm. Target surface must be white so that the black aiming area (centre) is clearly visible under normal light conditions at the appropriate distances. Targets are compliant with 10m Air Pistol Target draw; See also figures, 5, 6 and 8.
 - 5.8.4. Max input 24V and all standards concerning power over data networks
 - 5.8.5. The valid zone for a "hit" is described, in detail for each target type in detail below.
 - 5.8.6. The targets must work in all weather conditions including rain and direct sunlight (max30klx).
 - 5.8.7. Indoor and Night competitions: The Competition Organiser must check whether the targets would be interfered by the artificial lights used.
 - 5.8.8. No active wireless communication by the individual targets in competition mode. For result presentations purposes, the network computer can serve wireless devices. The network computer must be protected against any external communication-interferences.
 - 5.8.9. Further details for the Laser Targets listed below are contained within the technical documents and Homologation documents. ("Technical Specifications Laser Shooting" and the current UIPM Homologation documents),
- 5.9 Laser "HIT" Target (HT)
- This type of target detects the presence of a laser signal only in the black zone of the target. Therefore, feedback arises only with a hit indication (green light).
- 5.9.1. The technical requirements are:
- 5.9.1.1. The target must identify the approved UIPM Signal Details are specified within the homologation documents.
 - 5.9.1.2. 200ms reaction time max concerning internal/external Light interface;
 - 5.9.1.3. A shot that hits the black centre zone is a valid shot. (A minimum of 80% of the UIPM signal duration has to be detected).
 - 5.9.1.4. Interference from any non-visible light has to be avoided and must be blocked by an IR-filter; Visible light different from the Laser light (wavelength range) should be blocked.
- 5.9.2. Specific requirements for all levels of competition:
- 5.9.2.1. 1.0mm precision of the laser dot detection at the border line between black and white zone. For a Hit indication, a minimum part of the Laser dot (1mm radius from centre point) must be inside of the black aiming area. The valid zone is of diameter 59.5mm (black zone).
 - 5.9.2.2. Must be suitable for use outdoors
 - 5.9.2.3. Protected from external perturbation (no reactions caused by incident light, which is different to the UIPM Signal).

- 5.10 This type of target detects the presence of a Laser signal on the target and determines in which zone (black or white), the incident Laser light was detected.
- 5.10.1. The technical requirements are:
- 5.10.1.1. The target must identify the approved UIPM Signal. Details are specified within the homologation documents.
 - 5.10.1.2. 200ms reaction time max concerning Light interface and the data interface (network to the competition server);
 - 5.10.1.3. The detection procedure must follow the First-Impact-Detection scheme. A shot that hits the black centre zone first is a valid shot. A shot that hits the white centre zone first is a missed shot.
 - 5.10.1.4. Must be able to send data of shots (Hit & Miss results in compliance with the UIPM Open Target Protocol).
 - 5.10.1.5. Interference from any non-visible light has to be avoided and must be blocked by an IR-filter; Visible light different from the Laser light (wavelength range) should be blocked.
 - 5.10.1.6. Connector for external lights.
- 5.10.2. Specific requirements for all levels of competitions:
- 5.10.2.1. Live display of shots (Hit and Miss) via a data network (UIPM Open Target Protocol).
 - 5.10.2.2. Indication of "Hit and Miss" shots on external lights.
 - 5.10.2.3. 1.0mm precision of the laser dot detection at the border line between black and white zone. For a Hit indication a minimum part of the Laser dot (1mm radius from centre point) must be inside of the black aiming area. The valid zone is of diameter 59.5mm (black zone).
 - 5.10.2.4. Must be suitable for use outdoors.
 - 5.10.2.5. Protected from external perturbation (no reactions caused by incident light, which is different to the UIPM Signal).
 - 5.10.2.6. Competition mode must log all settings and shooting data. All data must be available after the competition for judges' purposes. All targets must have the same behaviour and performance (network management).
 - 5.10.2.7. The shooting time starts when the target is hit by the first shot (registered shot, valid or not)
- 5.11 Laser Precision Targets (LPT) (see figure 6)
- This type of target detects the presence of a Laser signal on the target and captures an image of the resulting Laser dot. Image capturing is synchronized with the UIPM-Signal timing. The embedded image processing procedure provides afterwards precise position information of the dot.
- 5.11.1. The technical requirements are:
- 5.11.1.1. The target must identify the approved UIPM Signal and needs synchronization between the Signal and the Laser dot analysis. Details are specified within the homologation documents.
 - 5.11.1.2. 200ms reaction time max concerning Light interface and the data interface (network to the competition server).
 - 5.11.1.3. The reconstruction procedure must follow the First-Impact-Detection scheme. A shot is valid if after the automatic reconstruction of the calibre 4.5mm from the beam centre impact it hits 7.3 or more. This equals to a valid zone diameter of 54.7mm.
 - 5.11.1.4. Must be able to send data of shots (X&Y Position of a shot from the impact centre point in compliance with the UIPM Open Target Protocol).
 - 5.11.1.5. Interference from any non-visible light has to be avoided and must be blocked by an IR-filter. Visible light different from the Laser light wavelength range should be blocked.
 - 5.11.1.6. Connector for external lights.
- 5.11.2. Specific requirements for all levels of competition:
- 5.11.2.1. Live display of shots on screen in 1/10 units via a data network during warm up (UIPM Open Target Protocol). Result presentations during warm-up by wireless connected devices are recommended.
 - 5.11.2.2. Indication of "Hit and Miss" shots on external lights.
 - 5.11.2.3. 0,5mm precision of the laser dot detection concerning the x/y coordinate's (it concerns the whole target).
 - 5.11.2.4. Must be suitable for use outdoors.
 - 5.11.2.5. Protected from external perturbation (no reactions caused by incident light, which is different to the UIPM Signal).
 - 5.11.2.6. competition mode must log all settings and shooting data. All data must be available after the competition for judges' purposes. All targets must have the same behaviour and performance (network management).
 - 5.11.2.7. The shooting time starts when the target is hit by the first shot (registered shot, valid or not).
- 5.11.3. The dimensions of all scoring rings are measured from the outside edges (outside diameter) of the scoring rings (see figure 8).

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- 5.12 Repeater Light Indicators (Result Display Lights) (see Figure 7)
- 5.12.1. Indicator Wavelength: Red colour must be 640nm and green colour 520nm. (+/- 20nm.) Indicators must be installed minimum 80cm up to the top of the target.
 - 5.12.2. Indicators must be clearly visible for the athletes and spectators and should be 55mm diameter with minimum of 120° viewing angle. Background of the indicators must be a contrasting colour. Distance between each red/green lamp must be about 40mm.
 - 5.12.3. For all other competitions, different indicators can be used but the lights must be clearly visible for athletes and coaches.
 - 5.12.4. The electrical interface must comply with the UIPM specifications
 - 5.12.5. Indicators can be placed horizontally or vertically.

- 5.13 Boxes:
The Competition Organiser may provide kit boxes for athletes' use. These boxes are to be removed from the Shooting Range at the start and stored in a safe place until after the competition concludes.

- 5.14 Devices and Tools:
- 5.14.1. Equipment Control
For the control of all kind of pistols the Competition Organiser must provide: box for dimensions, scale for the weight, ruler, square, angle scale and a system to register and mark the approved pistols.
 - 5.14.2. Built Material and Tools
The Competition Organiser must have available material and tools to build, maintain and rebuild the Field of Play. This includes measuring tapes, rulers, measuring wheels, hammers, tools and equipment to repair the ground, barriers, poles or posts, tape, ink, paintbrush, plastic cones, and so on.

FIGURE 1 - INDOOR OR NIGHT RANGE LIGHT REQUIREMENTS (IN LUX)

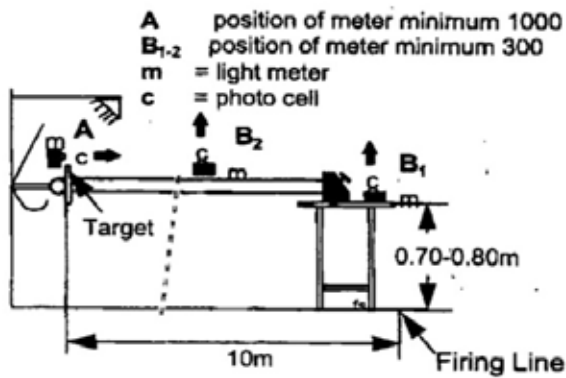


FIGURE 2 - THE PISTOL GRIP

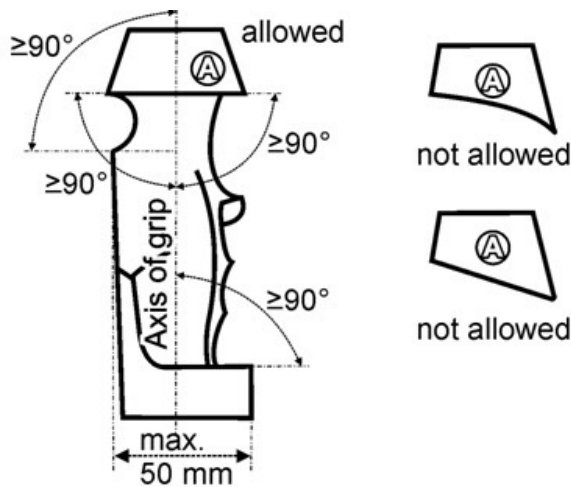
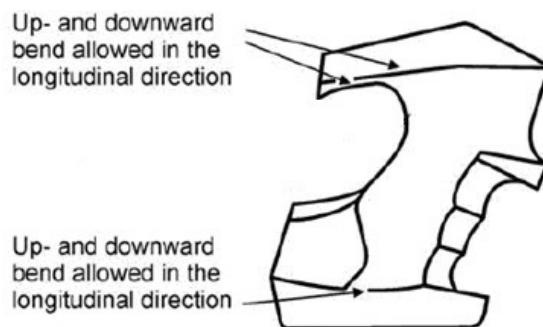
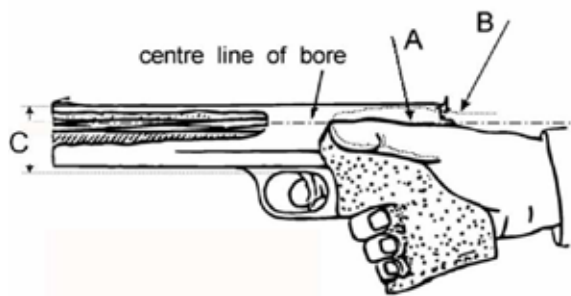


FIGURE 3 - BENDS IN THE GRIP



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acceptable
not acceptable
Laser light emitting area

FIGURE 5 – LASER HIT-MISS TARGET (EXAMPLES)

