# FEDERATION INTERNATIONALE DE TIR AUX ARMES SPORTIVES DE CHASSE 

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## INTERNATIONAL RULES UNIVERSAL TRENCH

01/01/2011

In case of controversial interpretation of the present regulation，the text written in French will make faith．

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1．01 A universal trench layout concists of five traps placed in a trench，fitted with a fixed or hinged roof．

1．02 The five traps are arranged in a straight line on firmly supported bases which are at the same level and perfectly flat．The bases are numbered 1 to 5 from left to right．

1．03 The five bases are laid out so that the five traps when loaded with a clay placed on the arm of each one have ：
$1^{\circ}$ ）A horizontal distance of 1 m minimum and 1.25 m maximum $(1.10 \mathrm{~m}$ recommended）between the centre of 2 clays placed on adjacent traps ready to be thrown．．
$2^{\circ}$ ）The traps must be installed in a trench so that the pivot point of the throwing arm is to $0.50 \mathrm{~m}(+/-10 \mathrm{~cm})$ below the top surface of the roof of the trench and set back $0.50 \mathrm{~m}(+/-10 \mathrm{~cm})$ from the front edge of the roof，when the trap is set at 2 metres elevation．

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1．04 The shooting stations，consisting of an area $1 \mathrm{~m} \times 1 \mathrm{~m}$ square，are placed in a straight line parallel to the 5 traps within the trench．A horizontal distance of 15 metres should be measured between the front line of the shooting stations and the front edge of the trench roof．

1．05 The extended centre line of the central shooting station（No 3）must pass through the exact centre of a clay placed on the arm of No 3 trap（which is ready to be thrown and adjusted to 0 degrees i．e．straight）and must be perpendicular to the line of traps． This central axis must be marked by paint or by a clay placed on the front lip of the trench roof．

The shooting stations are placed so that there are 2 to the left and 2 to the right of station No 3．They are placed 2.5 metres from centre to centre，so as to allow for intervals of 1.5 metres between each of the 5 stations．

1．06 Each shooting station must be equipped with a stand for shooters to place their cartridges．

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1．07 The trajectories of the clays thrown by the 5 trench traps can be modified in order to vary the shooting conditions．

To carry out these different adjustments， 10 official schemes have been established （see last page of these rules）．
1.08 The thrown clay should have a trajectory in still air conditions that conforms to the official schemes, with a tolerance of $+/-5 \mathrm{~m}$. This distance shall be measured from the pivot point of the trap arm(1.03.2) of the five traps measured in the direction of the trajectory.
1.09 The height control of the trajectories is taken at 10 m in front of the trap. The height control of the trajectories is taken at 10 m in front of the trap. The height of a clay must be a minimum of 1.50 m and a maximum of 3.50 m , with an allowance of $+/-$ 0.50 m .

The club organizer must supply the necessary material to control these trajectories.
1.10 The adjustment of the trajectory right or left must be done in such a way that the clays do not fall outside the limits represented by the two sides of a $90^{\circ}$ angle, where the apex is the center of machine $n^{\circ} 3$, so that median extends behind the center of the shooting stand $\mathrm{n}^{\circ} 3$.
1.11 The throwers $n^{\circ} 1 \& n^{\circ} 2$ throw the clays to the right, and the throwers $n^{\circ} 4 \& n^{\circ} 5$ to the left, in such a way that the trajectories must cut the median line.
1.12 The trench traps must be provided with a permanent device allowing, by a simple reading, different adjustments to be made that conform to the points stipulated in paragraphs, $1.07,1.08,1.09,1.10 \& 1.11$.
1.13 Each trap, after having been checked in this way, must be solidly fixed so that the obtained trajectory cannot be involuntarily altered during the testing process.
1.14 The different adjustment devices for each trap (projection speed, height of the trajectory and if the case arises, position of the clay from the start) must be fitted with a eyepiece to allow lead seals to be affixed that will verify each day of the competition.

## CLAYS

1.15 The clays must have a diameter of 11 cm , a height of 25 to 26 mm , and a weight of between $100 \& 110$ grams. For international competitions, the clays must be the same color and the same agreed upon mark.
1.16 The situation of the shooting ground and the color of the clays must be such that the latter detaches visibly against the background, under normal lighting conditions

## THROWING DEVICE

1.17 The traps must be ordered by a sono-pull devise (electric or electronic) with a sequencer which allows the shooters to receive identical clays, in a different order, but without knowing which of the 5 traps will throw the clay.

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2.01 All weapons, except pumpguns, may be used, including semi-automatic models, as long as the ejection of the empty cartridge does not disturb other shooters, and on the condition that the caliber does not exceed 12 bore.

No advantage will be given to shooters using a caliber less than 12 .

2．02 No weapons is allowed with a barrel length less than 66 cm ．
2．03 Straps and slings on weapons are forbidden．
2．04 All shooting arms，even if unloaded，must be handled with extreme caution．Guns must be carried open and unloaded．

Semo－Automatic guns must be carried with the breech open，and the muzzle pointing straight upwards or downwards．

2．05 When the shooter is not using his gun，it must placed vertically in a gun rack or in a similar place．It is forbidden to touch the gun of another shooter without authorization．

2．06 After having been shot，the length of the cartridge can must not be more than 70 mm ． The cartridge load must not exceed 28 grams of lead，with an allowance of $+/-0,5$ grams．

The leads will be spherical，with a maximum diameter of 2.5 mm ，with an allowance of $+0,1 \mathrm{~mm}$ ．

The use of black powder is forbidden，as well as tracer cartridges or reload cartridges in international competitions．

2．07 The mandated referee can remove two cartridges from the gun of a shooter or several shooters，to enable the jury to see if they conform to the rules．

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## 3．1 Personal dress

Shooters are requested to come to the shooting stand dressed in a suitable fashion for a public event．
Shorts are forbidden，only knee－length shorts（of the Bermuda type cut off 5 cm at most above the knee）are allowed．
Shirts must have at least short sleeves，with or without a collar，but must come to the base of the neck at least（tee－shirt）．

Stripping to the waist under the shooting jacket is forbidden．
Sandals are forbidden for safety reasons．
At the opening ceremony，during the parade of National teams，their members have to be in the attire of their National team，or wearing a pair of pressed trousers \＆blazer．

At the closing ceremony，all the awarded shooters shall attend the prize giving，either in the attire of their National team，or wearing a pair of pressed trousers \＆blazer．

## 3．2 Numbers

The shooter＇s competition number must be visible and worn in its entirety．
Any failure to comply with these rules will be sanctioned by a＂WARNING＂from the referee leading to sanctions that can involve exclusion from the competition，by decision of the jury．

### 3.3 Equipment

All electronic, mechanical devices, or any other ones likely to indicate the clay trajectories \& angles to the shooters, are strictly forbidden.
The use of mobile telephones, walkie-talkies or similar devices by competitors, coaches and team officials within the competition area or in hearing distance of the competition area, is prohibited. All mobile telephones must be switched OFF or silent.

Only sound reducing devices may be used. Radios, tape recorders, or any type of sound producing or communication systems (like "Blue tooth") are prohibited within hearing of the competition area during competitions and official training.

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4.01 The shooter will adopt the ready position and his gun must be shouldered before calling the clay. The shooter places his feet within the limits of the shooting stand. If the shooter is found in an irregular position, he will receive a warning.

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## JURY AND REFEREE

5.01 International events will be controlled by a jury consisting of a representative from each participating country with a registered national team. The chairman of the Jury will be the delegate appointed by FITASC who will come from a country other than the organizing country.
The Jury members which noticed an irregularity cannot directly intervene to the referees, but they must report what they observed to the Jury.

All the members of the jury must wear an identification badge supplied by the organizer.
5.02 The role of the jury is to control the national or international licenses of the referees, and to name, if there are not sufficient numbers, auxiliary referees from the competitors that are selected by the jury to offer their services to represent the National Federation or the championship organization.
5.03 The members of the jury and the referees are responsible for the controlling before the start of the shooting, that the installations conform the specification and that the preparations were done in a suitable and effective manner.
5.04 The jury's verdict is only viable in the presence of their president, or his delegate accompanied by a quarter of the members of the jury who will take their decision by majority of the members present. In the event of a tie, the chairman's vote prevails.
5.05 In the case of an emergency (e.g. a risk of the shooting being stopped), two members of the jury, nominated by the chairman, may take an exceptional decision with the consent of the referee, provided that this decision is endorsed by the jury.
5.06 To make sure that the sporting rules are adhered to during the shooting, including checking the guns, the ammunition, and the clays by means of technical tests.
5.07 Respond to protests
5.08 To make decisions regarding penalties to be imposed on a shooter who does not adhere to the rules, or behaves in an unsportsmanlike manner.(articles 11.03,11.04, 11.05)
5.09 The chairman of the jury must ensure that there are at least 2 members of the jury present on the group of stands.
5.10 The organizing committee will come to a point of agreement with the jury, for a plan to draw lots. The composition of the groups is drawn a day before the competition at a prearranged time, so that the participating national delegates can be present. The rounds or groups are comprised of a maximum of 6 shooters and a minimum of 3 .
5.11 During the progress of an international competition, if necessary, the adjustment schemes for each trap, will be modified daily.

These schemes are drawn by the jury.
As soon as the new schemes are effective, a test clay will be launched from each trap and all the adjustment devices will be newly blocked.
5.12 In the case of an Act of Providence, the jury can reduce the number of clays for a competition. In this case, the shooter can claim compensation for clays no shot on the price based on a training round. An appeal jury will be created for each international competition.
5.13 A jury of appeal will be set up at the start of each international competition.
5.14 In the case of a shooter disputing the decision of the jury or the FITASC, the jury of appeal may be referred to. This appeal jury will consist of the President of the organizing country, the FITASC President or his representative, the President of the technical committee or his representative, and of the FITASC technical director. This appeal jury will be formed at the same time as the jury.

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6.01 The shooting is overseen by the head referee who possess his international FITASC referee license.

After each throwing he must signal clearly if the clay must be counted «KILL» or «ZERO ».
6.02 The referee and his assistants, under the control of the jury, will apply the rules, assure the safety of the public present, and to ensure the latter does not disturb the shooters.
6.03 The referee is assisted by 3 auxiliary referees chosen from the competitors from the previous group. The shooters cannot refuse to perform this function if they are asked, but the referee has the right to accept a replacement from amongst the shooters in the competition.

The shooter who refuses to accept the job as an auxiliary referee if he has been asked or is conspicuously late going to his post, can be sanctioned (art $11.04 \& 11.05$ ).
6.04 An assistant must be placed on each side of the shooting range, in a position where he can observe the whole of the shooting zone. The third assistant must be placed near to the display panel or score board, to publicly register the referees decision and inform the shooters.
6.05 The main judging referee takes his decision alone. If one of the auxiliary referees has a different decision, he must lift his arm to inform the principle referee who will make his final decision. However, before taking that decision he can consult with the other auxiliary referees.
6.06 Immediately after each round the shooting results are examined and compared. If one of the marks does not correspond to the others, only those corresponding to the panel or score board are viable.

After this verification the result of the rounds are announced in a loud voice by the referee, in such a way that the shooters can hear them. Each shooter must verify and sign his final result, before leaving the shooting range.

No complaint will be accepted after this formality.
6.07 Before the start of each round the referee must clearly announce and in a loud voice to the puller, the number of shooters present in the group, so he can position his trap on to the announced number ( $6,5,4,3$, shooters).
6.08 In the eventuality where the trap was not correctly positioned on the number of shooters in the group by the puller and the shooting starts, the distribution given to each shooter with the same division of clays is false.

## The referee must immediately interrupt the shooting as soon as he realizes.

The result of the clays will be considered as established and the referee will position the counter on the correct number of shooters present, $6,5,4,3$ and the shooting can restart where it was stopped.
6.09 The shooting takes place without other interruptions other than those planned in the program or that come from technical difficulties.
6.10 The referee can however, in some circumstances, interrupt the shooting if it suddenly starts to rain heavily, or if there is a violent storm that appears to be only for a short period. However, he must inform the jury if this interruption is likely to last.


7.01 Each round consists of 25 clays
7.02 At the moment of the call, the shooter must be ready to shoot immediately and he must have with him the ammunition and equipment that he needs to shoot in the whole round.
7.03 The testing of fire arms is authorized before the first round of each day, but this can only be done one shooter at a time at their stand in group order and on the order of the referee.

The trajectories must be presented to the shooter of each group, in order of throwing 1 to 5 .
7.04 At the start of the shooting, 6 competitors will be ready, one to each shooting stand and the sixth must be ready to take the place of the 1st competitor when he has left stand $\mathrm{n}^{\circ} 1$, etc...

After having shot at stand $n^{\circ} 5$, the shooters must immediately return to stand $n^{\circ} 1$, the gun « open and unloaded».
7.05 The referees or other designated officials are responsible for the orders «START THE SHOOT», «STOP THE SHOOT» «UNLOAD» and all other necessary instructions for the smooth running of the shooting. The judging referees must equally make sure that the orders are made and that the guns are handled without danger.

Every shooter who operates a gun without the permission of the referee, before the order «START THE SHOOT» or after the order «STOP THE SHOOT» has been given, can be sanctioned by a «WARNING» (art 11.03) and excluded from the competition in the case of subsequent offenses (art 11.05)
7.06 Shooter $n^{\circ} 1$ must not load his gun until the referee has given him the permission to start the shooting.

The other shooters can not close their loaded guns until the preceding shooter has shot his clays.

In all cases, the gun cannot be loaded unless pointing in the direction of the trench.
After having shot, the shooter must not turn around on the shooting range before opening his gun.

The operation of guns is forbidden when staff are found in front of the shooting stands (art $11.04 \& 11.05$ ).

It is forbidden to aim at or shoot another clays, it is equally forbidden to aim at or to pretend to shoot living animals (art $11.04 \& 11.05$ ).

The shooters and other people found in the immediate proximity of the shooting line are strongly advised to wear ear protectors or other suitable anti-noise protection.
7.07 When the competitor is ready to shoot he will order the clay by: «PULL», «GO », «LOS », or other orders setting on the sono pull.

After having shot at his stand the competitor must wait until the following shooter has finished his, before taking his place. If not, he could receive a warning (art 11.03).
7.08 In the case of an interruption of the shooting, the gun must be immediately opened, and it must not be closed or reloaded before the shooting is resumed, without the authority of the referee judge.
7.09 The shooter is given $\mathbf{1 0}$ seconds to order his clay, after the preceding clay has been shot. In the case that this delay is exceeded the shooter is liable for a «WARNING » (art 11.03)
7.10 After the shooting of the last clay of a round all the shooters must stay in their place until the last competitor has shot and that the referee judge has declared « SHOOT IS OVER»
7.11 When the shooter calls his clay, it must be launched immediately, taking in to account only the time to react to the signal.(approximately $1 / 10$ seconds)
7.12 All clays launched must be shot at except if the shooter considers that his launching does not correspond directly to (art 7.11). In this case, the latter can be refused, by clearly lowering his weapons. However, if the referee judges that the clay was launched conforming to the rule, it can then be counted ZERO.
7.13 All malfunctioning of the traps during the shoot must be pointed out to the maintenance staff by the referee.

In the case where the trap cannot be repaired in time and reasonable conditions the referee can decide to change the faulty trap and proceed later with its adjustment.
7.14 When the shooter is interrupted for more than 5 minutes during a round, because of a technical incident which is not attributed to the shooter, the trajectories must be represented to the group.

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8.01 In the case of a shooting incident with his gun, what ever is the reason, the shooter must remain standing, weapon pointed towards the shooting zone, without opening his gun or touching the safety catch, until the weapon has been examined by the referee judge.
8.02 A gun must be considered out of service if:
a) It cannot be shot in total safety.
b) It does not prime the powder charge.
c) If the empty cartridge is not ejected, because of a mechanical problem on an semiautomatic gun.
d) If there is a simultaneous discharge.

In these cases, the shooter has the right, without penalty to a new clays twice in the same round without taking into account gun changing. The third malfunction and the following will be considered as « ZERO ».
8.03 The following incidents are not considered as a malfunction and the referee will register the score as if the clay is launched:
a) False handling by the shooter.
b) Chamber(s) not charged or by empty cartridges.
c) Gun in safety position.
8.04 If the referee judges that a shooting incident is not attributed to the shooter (art 8.02) and that the weapon cannot be repaired quickly, the shooter can use another weapon with the agreement of the referee, on condition that he follows this procedure within 3 minutes of the declaration that the gun is out of service.

The use of small flags of communication is compulsory, for the additional referees. The small flags will be coloured red, and they will be used to agree the decision of <ZERO>> or to inform the referee of a problem with the squad.
8.05 In the case of major force, the shooter, after having been authorized by the referee, can leave his group and finish his round at a time fixed by the referee or by the jury, with no penalty for the first incident and with a penalty of 3 «ZERO'S» for subsequent incidents.

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9.01 Two shots can be fired at each target
9.02 The clay shot is declared « KILLED » when it is launched and shot according to the rules and if at least one visible piece is broken. The clay called « FLASH» must comply to the same rules.
9.03 The referee must immediately decide if the launched clay is considered to conform or is a « NO BIRD », if possible before the shooter has fired his first shot.
9.04 The clay is considered « LOST » when:
a) If the clay is shot at and it is not hit during its flight.
b) If it is only dusted (smoking \& dust clays).
c) If the shooter does not shoot at a clay that has been called and thrown properly.
d) If the shooter cannot shoot because he has not released the safety catch, forgotten to load or cock his gun or if it has been infufficiently closed or (art 8.03).
e) If the shooter misses his clay on the first shot and he cannot fire the second shot because:

- he has forgotten to place a second cartridge
- he has not released the apparatus on the magazine of an semi-automatic weapon
- the safety catch of the gun has slipped back into place following the recoil from the first shot
- if the second cartridge comes unsealed and empties from the effect of the recoil
f) if the shooter, in the case of malfunction or misfire of his gun, the shooter opens the gun or touches the safety catch before the referee has examined the gun.
g ) if it is the third (or subsequent) malfunction of the gun or ammunition by the same round by the same shooter (art 8.02).
h) if the clay is not shot for a reason which does not entitle the shooter to a new clay.


### 9.05 The clay is declared «NO BIRD». A new clay will be launched whether or not

 the competitor has fired:a) If the clay breaks before being released
b）If the trajectory is irregular（the clay zigzags，has insufficient initial speed），etc．．．
c）If two clays or more are launched at the same time from the same trench
d）If the color of the clay is very different from the color of the other clays used in the competition from the same trench．
e）If the clay is launched before the shooter has given the command
f）If the clay is not launched on command and the shooter clearly lower his gun «NO TIME »（art 7．12）

9．06 The replacement clay must obligatory be launched by the same trap on the same trajectory as the «NO BIRD »（art 9．08）

9．07 The referee can equally declare a shot clay « NO BIRD » and order the launching of a new clay when：
a）If the shooter is visibly disturbed．
b）Another competitor shoots on the same clay．
c）The referee can，for any reason，find that it is impossible to determine if a clay is hit or missed．Under these circumstances，the referee can consult his assistants before agreeing to a new clay．
d）If a competitor misses with the first shot and has a malfunction with the second shot，a repeat target will be given but only second shot to count subject to article 8．02．

9．08 A shot will be considered as not fired：
a）If the competitor shoots，when it is not his turn，he will receive a warning（art 11．03）．
b）If the shooter lets off his gun，on his turn but before he calling the clay，he will receive a warning（art 11．03）．However，if the clay is launched and the competitor fires his second shot，the result will then be registered．
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10．01 If the shooter disagrees with the referee＇s decision regarding the assessment of a shot， the shooter must protest immediately，by raising the arm and saying «PROTEST» or «APPEAL»．

The referee must then immediately interrupt the shooting，and after having consulted the auxiliary referees，make his decision known．
In no case，he is allowed to pick up the clay to see if it has been hit or not．
10．02 The shooter can appeal to the jury to contest the decision of the referee．
This appeal must be addressed in writing and accompanied with an amount which is a deposit that is determined by the jury，before the competition，and that will be returned to him if the protest is accepted by the jury．

In this case，the jury can give instructions to the referee for future judgments or name a new referee or finally modify the decision of the referee．
10．03 He can not make an appeal against the decision of the referee in the following cases：
a）on judging if a clay is killed or zero
b）if a trajectory is judged correct or no bird
c）if the launching of the clay took place in the time that conforms to the rule

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11．01 All the shooters taking part in competitions are obliged to know the present rules and to undertake to respect them．They will accept in advance to be subject to penalties and other consequences that result from the violation of these rules or the orders of the referees．

11．02 If the shooter uses weapons or ammunition that do not conform to the terms of art $n^{\circ} 2.01,2.02,2.03,2.06$ ，all shots fires with these weapons or ammunition «WILL BE CONSIDERED AS ZERO »．

If the jury judges that it was impossible for the shooter to have known his breach of the rules and through it has attained no essential advantage，it can decide to accept the result，on condition that the fault is rectified once it is known．

## 11．03 SANCTIONS

The referee gives the shooter when a rule is infringed：
－at the first fault ： 1 warning
－at the second fault ： 1 second warning
－at the third fault during the same round and for each of the successive faults，the next clay that is broken will be counted as ZERO．

11．04 In the case where the shooter is penalized directly by the referee he will loose 3 clays．

11．05 In the case where on the referee recommendation，the jury can exclude the shooter from the competition．
11．06 When the referee sentences a shooter to loose 1 or 3 clays（11．03，11．04），this penalty will be deducted from the next clay（s）broken in the round，in the following round or roll over until the last clay（s）of the last round of the competition，on the final score of the shooter．

11．07 If the shooter does not present himself to the referee before the first shot of his round has been shot by his group，and after having been called 3 times，he will be penalized by loosing 5 broken clays（art 11．04）．

He can be authorized to shoot on the same day，in a round that he has not participated in，at a moment and at a place fixed by the principle referee or the jury．
11．08 The second violation of article 11.07 （absence），the shooter will be excluded from the competition

11．09 In all the cases where a shooter interrupts during the course of the shooting without a viable reason，a penalty of zero will be accounted to him（art 11．06）

11．10 If the shooter leaves his group without one of the reason quoted in the rules，or without a reason accepted and approved by the referee，all the clays in his round waiting to be shot，will be registered as ZERO．In case of a subsequent offense， article 11.05 can be applied．
11.11 In the case where the referee or a member of the jury finds that a competitor intentionally delays the shoot or he acts in an unsportsmanlike manner, he can be sanctioned.(art 11.03, 11. 04, 11.05)

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12.01 In the event of a tie for one of the three first places of a championship there will be a shoot off staged over one round of 25 targets to decide the winner. «IF THE TIE IS NOT BROKEN then the competitors will shoot a second round using only one cartridge (single barrel)» The first zero will eliminate the competitor after each shooter has shot the same number of targets.
12.02 The shoot off is done in accordance with the present rules, however, the empty places in the group are not replaced.
12.03 When the shoot offs are not done at a time fixed in advance, the shooters concerned must stay in contact with the jury, in order to be ready to shoot in less than «FIFTEEN MINUTES » after their call. If they do not present themselves with in this time, they will be considered withdrawn.
12.04 Shooters finishing below third place with the same scores are ranked as equals, by counting back the squads (from stand 8 to stand 1 ).

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13.01 Prizes can be awarded to the best results of each day of shooting, but the official medals and international championship titles cannot be given without conforming to the rules and based on 200 clays (art 5.12)
13.02 The installations must be open for practice during the three days before the competition. During these practices, the clays will be of the same type that are used during the competition, see article $n^{\circ} 1.16$ and 1.17.

Seven days before the beginning of the championship, the President of the technical commission gives to the President of the organising Federation the shooting schemes which will be used for the championship.

The practice positions may be set on the same shooting schemes as used for the championship.

The Technical Commission, checks the adjustments the day before the championship.
13.03 Unless advised otherwise by the official organizer, during the championship, it is forbidden to practice between the rounds, on the trenches controlled for the competition.

## GLOSSARY

SQUAD :

ROUND : consists of 25 clays thrown from the same trench.
TRAP : machine or device for throwing the clays.
SONO-PULL :
SHOT : firing of a cartridge.
TRENCH :

CLAY:
TRAJECTORY: The line of flight of the clay through the air.

## UNIVERSAL TRENCH SHOOTING SCHEMES

| SCheme | trap | angle |  | HEIGHT <br> (at 10 m ) | distance |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | L | R |  |  |
| 1 | 1 |  | $35^{\circ}$ | 1,5 m | 70 m |
|  | 2 |  | $20^{\circ}$ | 2,0 m | 60 m |
|  | 3 | $10^{\circ}$ |  | 1,5 m | 75 m |
|  | 4 | $30^{\circ}$ |  | 3,0 m | 65 m |
|  | 5 | $45^{\circ}$ |  | 1,5 m | 60 m |
| 2 | 1 |  | $40^{\circ}$ | 2,0 m | 65 m |
|  | 2 |  | $25^{\circ}$ | 3,5 m | 60 m |
|  | 3 |  | $5^{\circ}$ | 2,5 m | 70 m |
|  | 4 | $15^{\circ}$ |  | 1,5 m | 75 m |
|  | 5 | $35^{\circ}$ |  | 2,0 m | 65 m |
| 3 | 1 |  | $45^{\circ}$ | 2,0 m | 60 m |
|  | 2 |  | $25^{\circ}$ | 2,0 m | 75 m |
|  | 3 | $5^{\circ}$ |  | 3,5 m | 60 m |
|  | 4 | $30^{\circ}$ |  | 2,5 m | 65 m |
|  | 5 | $45^{\circ}$ |  | 1,5 m | 70 m |
| 4 | 1 |  | $40^{\circ}$ | 2,0 m | 70 m |
|  | 2 |  | $15^{\circ}$ | 3,5 m | 60 m |
|  | 3 | $5^{\circ}$ |  | 1,5 m | 70 m |
|  | 4 | $30^{\circ}$ |  | 3,0 m | 75 m |
|  | 5 | $35^{\circ}$ |  | 2,5 m | 65 m |
| 5 | 1 |  | $45^{\circ}$ | 2,5 m | 65 m |
|  | 2 |  | $30^{\circ}$ | $3,0 \mathrm{~m}$ | 60 m |
|  | 3 |  | $5^{\circ}$ | 2,0 m | 75 m |
|  | 4 | $30^{\circ}$ |  | $3,5 \mathrm{~m}$ | 70 m |
|  | 5 | $40^{\circ}$ |  | 2,0 m | 65 m |


| scheme | trap | angle |  | HEIGHT <br> (at 10 m ) | distance |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | L | R |  |  |
| 6 | 1 |  | $40^{\circ}$ | 1,5 m | 60 m |
|  | 2 |  | $15^{\circ}$ | 1,5 m | 75 m |
|  | 3 |  | $5^{\circ}$ | 2,5 m | 65 m |
|  | 4 | $30^{\circ}$ |  | 2,5 m | 65 m |
|  | 5 | $45^{\circ}$ |  | $3,0 \mathrm{~m}$ | 60 m |
| 7 | 1 |  | $40^{\circ}$ | 2,0 m | 70 m |
|  | 2 |  | $15^{\circ}$ | 1,5 m | 65 m |
|  | 3 |  |  | 2,0 m | 75 m |
|  | 4 | $20^{\circ}$ |  | 2,5 m | 65 m |
|  | 5 | $40^{\circ}$ |  | 2,0 m | 70 m |
| 8 | 1 |  | $35^{\circ}$ | 2,0 m | 75 m |
|  | 2 |  | $15^{\circ}$ | 1,5 m | 65 m |
|  | 3 |  |  | 2,5 m | 60 m |
|  | 4 | $20^{\circ}$ |  | 3,0 m | 65 m |
|  | 5 | $45^{\circ}$ |  | 2,5 m | 70 m |
| 9 | 1 |  | $40^{\circ}$ | 2,5 m | 60 m |
|  | 2 |  | $25^{\circ}$ | 2,0 m | 70 m |
|  | 3 |  |  | $1,5 \mathrm{~m}$ | 70 m |
|  | 4 | $15^{\circ}$ |  | $3,5 \mathrm{~m}$ | 65 m |
|  | 5 | $35^{\circ}$ |  | 3,0 m | 75 m |
| 10 | 1 |  | $35^{\circ}$ | 2,0 m | 65 m |
|  | 2 |  | $25^{\circ}$ | 2,0 m | 75 m |
|  | 3 |  | $10^{\circ}$ | 3,0 m | 60 m |
|  | 4 | $30^{\circ}$ |  | 2,5 m | 70 m |
|  | 5 | $45^{\circ}$ |  | 2,5 m | 60 m |

