FITASC/ESC Opinion – ECHA RESTRICTION REPORT – Lead in clay target shooting ranges

19 July 2023

The European Shooting Confederation (ESC), chaired by Alexander Ratner, is the European section of the ISSF which manages Olympic sport shooting; ESC brings together 57 member National federations in 50 countries, including 33 member National federations in 27 EU countries.

The Fédération Internationale de Tir aux Armes Sportives de Chasse (FITASC), chaired by Jean-François Palinkas, manages non-Olympic clay target sport shooting, and brings together 45 European member National federations, including 35 member National federations in 27 EU countries.

As a preamble, FITACS/ESC remind the following:

- Regarding the quantity of cartridges fired per year by a sports shooter: for a beginner shooter, 1,000 fired cartridges/y and for an international shooter, until 60,000 fired cartridges/y. This cannot absolutely be compared with the number of cartridges fired by a hunter, only a few dozen par year. Thus, the ballistic consequences of a shift from lead to steel for hunters cannot be transposed for sport shooters.
- Unlike a hunting ground, a shooting club is an enclosed, maintained area.
- All scientific studies broadly demonstrate that there is huge evidence to claim that steel shot promotes the mobility of lead, increases the acidity of soils, and even increases pollution of water bodies.

FITACS/ESC welcome the recognition of the need to launch the management of lead in clay target sport shooting at the European level, and they take note of ECHA's proposal to apply derogation conditions for clay target sport shooting.

However, there are several issues of concern that would be useful to be clarified before restricting lead at clay target sport shooting: *(i*) RAC risk assessment is not based on the proper scientific tools, *(ii)* the ballistics of steel is incompatible with the practice of clay target sport shooting leading to a non-technical feasibility, *(iii) S*ome of the proposed derogation conditions made by ECHA are neither scientifically justified, nor economically sustainable and will end competitive sports shooting at clay target ranges.

Our concerns focus around these three topics:

i. Risk assessment provided by RAC has not used the proper scientific tools.

- The “RAC conceptual site model (CSM)” is not a conceptual site model. It is a nice picture mixing different items, trying to describe what’s going on a shooting range.
- It is our understanding that the conclusion of quantitative risk assessment (QRA) based on the CSM is expressed as low (+), moderate (++) or high (+++) risk. This is not the internationally recognized way to do such risk assessment.
- While the main exposure to lead appears to be human being, calculations for risk assessment from CSM should be, according to WHO, presented as indicators: hazard quotient for threshold effects (acceptable quotient <1) and individual excess risk for genotoxic carcinogenic effects (acceptable IER $<10^{-5}$). Indicators are calculated for each substance and each exposure route.

- The proposed QRA by RAC does not explain calculation of the daily exposure dose that must be established for each potential exposure route, depending on the weight of the individuals, their duration of exposure, etc.
- The proposed QRA by RAC does not consider the calculation of uncertainties. The objective of this uncertainty assessment step is to carry out additional simulations leading to new risk quantifications by varying different parameters and/or integrating new parameters into the conceptual site model.
- From a human health perspective, possible emissions of lead dust are contained by using wads with a container (resulting in no friction between barrel and lead shot). Thus, there is no health risk for sport shooters or shooting range staff.

ii. The ballistics of steel is incompatible with the practice of clay target sport shooting leading to a non-technical feasibility:

- The ballistics of steel shot is totally different from ballistics of lead shot: the difference in density (7.8 for steel vs 11.3 for lead) impacts shotgun recoil, vibrations and noise, energy to break targets, ejection velocity. Considering the number of cartridges shot by a sport shooter, the use of steel shot instead of lead shot has a great impact on health shooter.
- The conclusions of the BPK report of September 26, 2022, commissioned by ECHA/SEAC on the ballistic consequences of the transition from lead to steel, show, as FITASC have previously demonstrated, that it is not possible to replace 2.4 mm lead shot with 2.6 mm steel shot (as this has been previously claimed by ECHA/RAC, which based their founding on false data).

  The BPK report recommended replacing 2.4 mm lead shot by steel shot with diameter between 3.25 and 3.5 mm, with no guaranty at all that it has sufficient energy to break a target at shooting distances beyond 30 m. So, as previously mentioned, the envisaged replacement of lead by steel at sport shooting is based on speculation, likely not valid.
- The substitution of lead shot by steel shot would, *de facto*, result in a noise increase of 9 dB(A), even higher than the permitted emergence. The substitution will expose shooting ranges to future non-compliance, complaints from residents, and will not be without consequences on the health of shooting range personnel.
- Replacement of lead by steel will drastically endanger the shooter's health and development of shooting sport, especially among juniors and ladies.

iii. Some of the proposed derogation conditions made by ECHA are neither scientifically justified, nor economically sustainable and will end competitive sports shooting at clay target ranges:

- In ECHA's proposal, the conversion of shooting ranges for the use of lead ammunition is associated with considerable investment costs and only adaptable to some disciplines, and thus the proposal disregards many existing, proven national risk management practices, and site-specific solutions. The said combined with a decrease in the number of hunters and sport shooters practicing entails that many shooting ranges would be forced to close.
- Due to the ballistic performances of steel, a lead ban would result in the end of three world disciplines of clay target sport shooting, most popular in Europe: Olympic Trap, Universal Trench, and Sporting. As proof, in the very few European countries where steel has replaced lead for many years, Olympic Trap has become a niche practice, Universal Trench and

Sporting do not exist; only Olympic Skeet, Compak Sporting and American Trap are practiced as targets at these disciplines are shot at short distances, between 20 and 30m.

- Replacing lead with steel shot would cause major practical problems for (1) sport shooting installations, (2) equality of practicing clay target sport shooting in the EEA, and (3) on the pyramidal organization of sports shooting in each country.
- A decrease in the number of ranges, and consequently the number of shooters, would be devastating for the Olympic and non-Olympic disciplines as stated above. Shooters located in the EEA would be at a disadvantage to non-EEA country competitors and internationally, as well as shooting facilities in the EEA, which would not be preferred as hosting countries for international competitions. The competitions are international and therefore conditions must be equal regarding regulations, firearms, and ammunition.

However, with adequate derogation conditions and exemptions proposed by FITASC/ESC, there can be lead recovery at site-specific frequency, where a circular economic model is implementable, with affordable, financially sustainable, and site-specific lead Risk Management Measures (RMMs), which would have several benefits for the environment, economy, and businesses.

The scientific studies of FITASC/ESC have proven that lead does not pose risks at outdoor clay target sport shooting ranges for the human health of sports shooters or for soil at many ranges. For example, in soils with pH below 6.5, a liming treatment that increases the pH above 6.5 prevents any risk of lead migration. Thus, lead shot fallout can be collected when its quantity is sufficient to finance its collection to be reintegrated into a circular economy.

In ECHA derogation conditions, FITASC/ESC support and propose:

- The only use takes place at a location that has a permit granted by the MS for the use of lead gunshot for sports shooting:

  FITASC/ESC suggest that the use takes place at a location that has a permanent permit granted by the Member State for the sole use of gunshot cartridges with wads with container AND lead gunshots sizes between 1.9 and 2.6 mm for sport shooting.

- FITASC/ESC fully agree with the following three RMMs put forward by ECHA:
  - Containment, monitoring and, where necessary, treatment of drainage water from projectile impact areas.
  - Ban of any agricultural use within site boundary is required.
  - Records of compliance with these conditions shall be maintained by permitted locations and shall be made available to enforcement authorities on request.

In ECHA derogation conditions, FITASC/ESC disapprove and propose:

- The retailer places lead gunshot on the market only for users licensed by Member States.

  FITASC/ESC suggest that only gunshot cartridges with wads with container AND with shot sizes between 1.9 and 2.6 mm (used for sport shooting) be on sale only at the shooting ranges having the permit above mentioned.

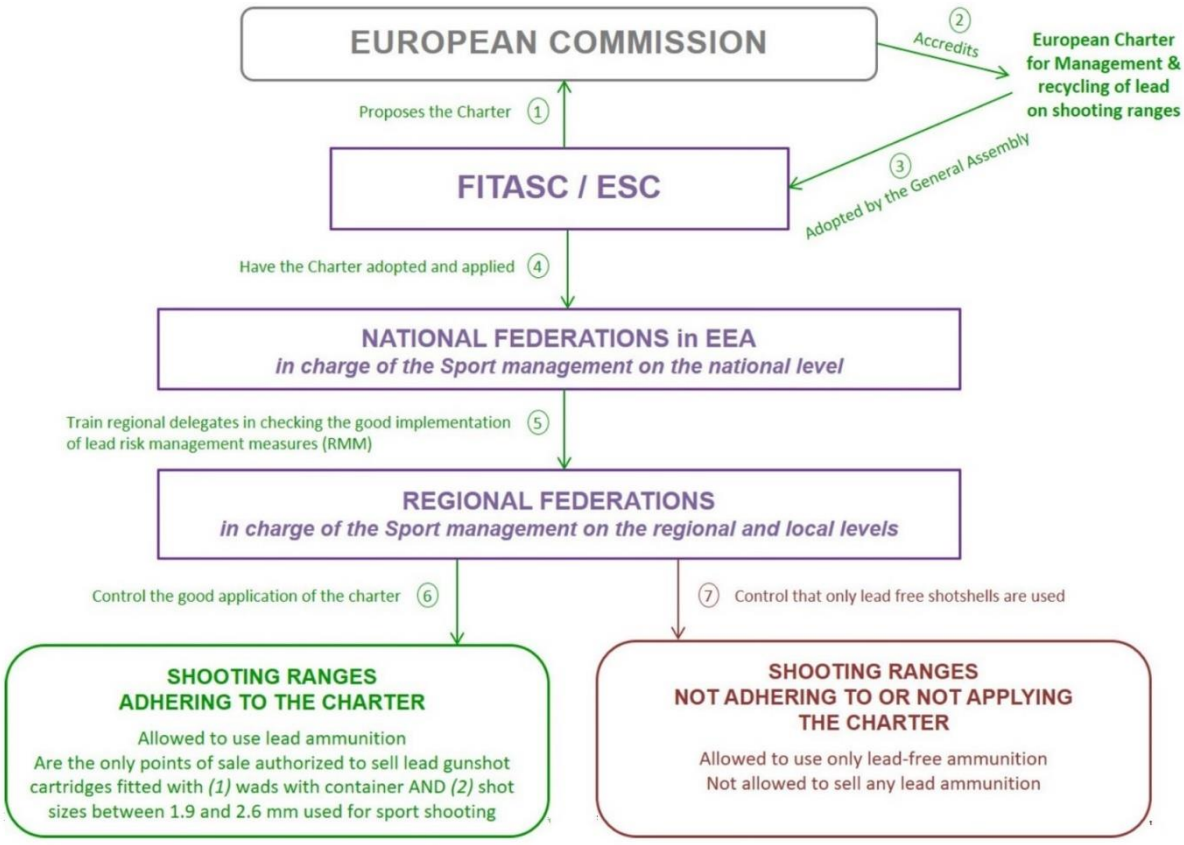
- The user has a licence, granted by the Member State, to use lead gunshot for sports shooting.

  FITASC/ESC claims there is no need to restrict the use neither to retailers, nor to users.

- ECHA's derogation conditions also involved risk management measures such as regular (at least once a year) lead gunshot recovery with >90 % effectiveness. FITASC/ESC must indicate 90% is an unscientific notion. What is 100 % definition?

  FITASC/ESC propose the implementation of lead recovery at site specific frequency and site-specific Risk Management Measures to prevent from lead chemical migration if necessary.

FITACS/ESC recommend the implementation of site-specific risk management measures, carried out under the control of the national federations and their regional network. The following flow chart proposes a road map to fulfil the RMMs implementation.



FITACS/ESC with the knowledge of their experts would welcome feedback and the opportunity to provide input where and when needed on future developments of European charter for management and recycling of lead on outdoor shooting ranges.

Yours Sincerely,

Jean-François PALINKAS
FITASC President

Alexander Ratner,
ESC President