Annex D – Electronic Target Scoring Rules (Service Rifle/Pistol)

Introduction. Electronic scoring targets (EST) are faster and more accurate than manual paper target scoring. In highpower rifle shooting, they also eliminate the time-consuming requirement for competitors to pull targets. Moreover, electronic target competition management software records and reports those scores in established competition formats faster and more effectively than any manual database. Nevertheless, in spite of these advantages, occasional problems, anomalies or complaints do occur and must be resolved by match officials. ***Annex D – Electronic Target Scoring Rules*** provides rules and guidelines for match officials to use in answering questions and resolving complaints regarding EST scoring.

EST Match Officials. In competitions where EST are used, the following competition officials are required and must work together as a team:

1. **Statistical Officer (SO)**. The SO accepts and confirms entries and generates start lists (squadding lists) for the events to be fired. Start or squadding lists must be given to the TO so they can be entered into the match management system. RO(s) should also be given start lists so they can confirm competitors on their firing points. The SO is also responsible for checking and releasing preliminary and final results lists.
2. **EST Technical Officer (TO)**. The TO operates the match management system software and targets. TOs must be trained and experienced in EST operations and know how to resolve EST complaints. The TO is responsible for making decisions regarding the number and scores of shots. In smaller competitions, the SO and the TO may be the same person.
3. **Range Officer (RO)**. The CRO or RO who works on the firing line is usually the first official to receive an EST complaint. ROs must work closely with the TO in resolving all EST complaints.
4. **Verifier**. During competitions with EST, competitors on a prior or upcoming relay are assigned as verifiers. Verifier duties include:
    a. Confirming that competitors fire at their targets and that their targets score those shots (failure to score usually indicates a crossfire or off-target miss).
    b. Confirming that competitors fire the correct number of shots at their targets during slow and rapid-fire series.
    c. Immediately notifying the RO regarding any questions, complaints or irregularities on the verifier's target.
    d. Scores recorded by verifiers are unofficial; the scores recorded by the competitor's monitors and in the main computer are the official scores.

EST System Components. Ranges with EST have the following system components:

- ***Electronic Targets**. EST generate shot data (x/y coordinates, shot radii, timings) after each hit and transmit that data to the main computer and to competitor monitors.*
- ***Firing Point Monitors**. Monitors display score and results data for each individual firing point where a competitor is firing. The monitor also provides a back-up memory of shot data generated on that firing point.*
- ***Main Computer with Match Management System (software)**. The match management system in the main computer operates the targets, handles entry data, receives and records score data from the targets and provides the necessary functions to support the conduct of the match.*
- ***Results Display System**. LCD or TV monitors or a projection system display incomplete (relay in progress), preliminary (still subject to protest) and final results that can be viewed at the range by competitors, match officials and spectators.*
- ***Results Distribution System**. During a competition, incomplete results, preliminary results and final results should also be available as live, updated results on the CMP Competition Tracker. Printed versions of the preliminary and final results should also be posted on the range.*
- ***Backing Cards**. A plain sheet of cardboard or heavy paper must be mounted on the rear of the target to serve as a backing card. Backing cards are used to confirm the number of shots actually fired at a target and as an aid in determining crossfires. Backing cards should be replaced or pasted after every two relays, if possible.*

BASIC EST SCORING RULE. Scores indicated (displayed) by EST monitors and recorded in the main computer are final unless complaints regarding those scores are made and resolved in accordance with these rules. Complaints regarding the indicated or non-indicated value of a slow-fire shot must be made to a RO or TO before the next shot is fired. Complaints regarding the number of shots in a slow-fire series or the number of shots or score values in a rapid-fire series must be made to a RO or TO immediately after the series.

Competitor Responsibilities. The competitor's link to the EST system is the monitor on that competitor's assigned firing point. The monitor displays the firing point number and the name of the competitor assigned to that firing point. It also displays the score and location of the most recent shot fired, the scores and locations of previous shots in that series as well as series and score

totals for the event being fired. Competitors and verifiers are responsible for contacting a RO as soon as a problem occurs. Waiting until later to make a complaint will invalidate the complaint.

Match Official Responsibilities. The SO, TO and RO are responsible for making sure, in accordance with these rules and to the best of their ability, 1) that every competitor receives the scores he/she actually fires, 2) that there is a prompt resolution of competitor questions or complaints and 3) that competitors are informed regarding the resolution of their questions and complaints.

1. Match Officials are responsible for the proper maintenance (cleaning, replacement of paper strips or rubber belts, maintenance of target masks, etc.) of all EST so that their scoring accuracy and reliability is guaranteed.
2. The RO and TO are responsible for documenting all EST scoring issues and complaints on ICR Forms (Issue or Complaint Report) or Pistol Refire Forms.
3. Only the TO is authorized to make score interventions on the main computer and every score intervention must be documented with an ICR or Pistol Refire Form.
4. **The SO, TO and CRO or RO must make final decisions on all EST score complaints. Their decisions regarding EST scoring are final and not subject to further appeal**.

EST ISSUES OR COMPLAINTS AND HOW TO RESOLVE THEM:

1. **Competitor Name Is Not Correctly Displayed**. Competitor's names must be correctly displayed on their firing point monitors before firing starts. ROs must check the names on the computer monitors before firing starts and confirm that competitors are on the correct firing points.

2. **Protested Shot Value**. A competitor may protest the indicated (scored) value of a shot. When this occurs, the RO must record the firing point, shot number and indicated value of the protested shot and then direct the competitor to continue firing to complete the series. After that relay is completed, match officials will remove the backing card from the target and locate the protested shot on the backing card. They will use a scoring template to verify the score of the protested shot.

   2.1. If the examination of the backing card confirms that the protested shot was scored correctly, a two (2) point penalty must be deducted from the series in which the shot was fired.

   2.2. If the examination of the backing card confirms that the protested shot was scored incorrectly, the score determined by using the scoring template must be counted in lieu of the indicated score and the indicated shot value in the computer record must be corrected.

   2.3. Using a scoring template on a backing card cannot be used to rescore shots that are close to a scoring ring. "Close to the scoring ring" is

defined as +/- two-tenths of a scoring ring. Therefore you are unable to challenge any score ending in .8, .9, .0, .1 and .2.

2.4. If backing cards are not used, score value protests cannot be accepted.

3. **Missing Shot, Slow Fire.** A missing shot is one where the competitor claims to have fired at his/her target, but no shot is registered on the monitor. Missing shots normally occur when the competitor crossfires on another target or fires an off-target miss. ROs must follow these steps:

3.1. Record the firing point, shot number and the time remaining when the complaint was made.

3.2. Check with the verifiers on adjacent targets (two or more) to see if one of those targets received an extra shot. If yes, inform the competitor. If the competitor agrees that the crossfire is his/hers, score the missing shot as a miss and instruct the competitor to continue firing to complete the stage of fire.

3.3. If the competitor disagrees that he/she fired a crossfire or there is no indication of a crossfire on adjacent targets, direct the competitor to fire his/her next record shot. **If that shot registers on the monitor**, direct the competitor to continue firing to complete the series, plus one extra shot at the end of the stage. After that stage of fire is completed, remove the backing card and count the shots on the backing card to determine if the missing shot hit the target.

3.3.1. If the missing shot is not found on the backing card, score the missing shot as a miss (0) and nullify the extra shot at the end of the stage.

3.3.2. If the missing shot is found on the backing card, use a scoring template to determine the score of that shot. Count that shot and nullify the extra shot at the end of the stage.

3.3.3. If it is impossible to determine whether the missing shot is on the backing card or if a backing card was not used, count the extra shot at the end of the series in lieu of the missing shot if there are no shots in that stage outside of the aiming black (9 ring at 200 yards, 8 ring at 300 yards, 7 ring at 600 yards).

3.3.4. Or, if it is impossible to determine whether the missing shot is on the backing card or if a backing card was not used and there are shots in that stage outside of the aiming black, score the missing shot as a miss and nullify the extra shot.

3.4. If the competitor fires his/her next record shot as directed in Rule 3.3 and **that shot does not register on the monitor**, this indicates that the target is not functioning correctly. Move the competitor to a spare (hospital) target and allow the competitor to complete the remaining shots in that series, plus two additional shots to replace the missing shots, within the time that was remaining when he/she complained plus five (5) minutes.

4. **Missing Shot, Rapid-Fire (Insufficient Hits).** Missing shots or insufficient hits in a rapid-fire series normally occur when the competitor does not fire all ten rounds, crossfires on another target or fires an off-target miss. Range Officers must follow these steps:

   4.1. Record the firing point number and confirm the complaint with the competitor and verifier.

   4.2. If the verifier confirms that the competitor did not fire all 10 shots (competitor had saved rounds), count the scored hits.

   4.3. If the competitor fired all 10 shots and there are nine or fewer shots indicated, check for excessive hits on adjacent targets. If there are excessive hits equal to the number of missing shots, score the missing shot as a miss (0).

   4.4. If the competitor fired all 10 shots and there are nine or fewer shots indicated, and there are no excessive hits on adjacent targets, remove the backing card and count the hits on the backing card to determine if the missing shot hit the target.

      4.4.1. If the missing shot is not found on the backing card, score the missing shot as a miss (0).

      4.4.2. If the missing shot is found on the backing card, use a scoring template to determine the score of that shot. Count that shot in the competitor's score.

      4.4.3. If it is impossible to determine whether the missing shot is on the backing card or if a backing card was not used, and if there are no shots in that series outside of the aiming black (9 ring at 200 yards, 8 ring at 300 yards, 7 ring at 600 yards), score the missing shot as equal to the value of the lowest scoring shot in that series.

      4.4.4. If it is impossible to determine whether the missing shot is on the backing card or if a backing card was not used, and if there are shots in that series outside of the aiming black (9 ring at 200 yards, 8 ring at 300 yards, 7 ring at 600 yards), score the missing shot as a miss (0).

5. **Unclaimed or Extra Shot, Slow Fire.** In slow-fire stages, extra shots can be caused by a crossfire from another target or, in rare cases, by a ricochet or debris from a shot fired at another target. ROs should follow these steps:

   5.1. If an **unclaimed or extra shot appears on the monitor**, the competitor may complain a) when he/she discovers the extra shot, b) when the competitor has one shot to fire and the monitor indicates that all shots in that series have already been fired, or c) when after firing his/her last shot, the competitor observes that the monitor indicates an extra shot has been fired.

   5.2. Record the firing point number and the time remaining when the complaint was made.

   5.3. If the unclaimed shot appears before the completion of the series, check for missing shots on adjacent targets. If there is a missing shot on an adjacent target, direct the competitor to continue firing to

complete the series, including what will be indicated as an extra shot at the end of the series. Nullify the unclaimed shot on the competitor's target and score the crossfire shot from another target as a miss (0) on that competitor's target.

5.4. If the extra shot cannot be identified before the end of the series, obtain the log prints for the competitor's target and any adjacent targets where there are missing shots. Use the shot timings to determine if the extra shot can be identified as a crossfire from an adjacent target. If a crossfire is identified, nullify that shot and count the shots fired by the competitor including the indicated extra shot.

5.5. If the crossfire shot cannot be identified, nullify the lowest value shot as the crossfire shot and count the remaining ten (10) shots as the competitor's score.

5.6. If a target receives two or more unclaimed extra shots in a slow-fire series and the crossfire shots cannot be identified, apply Rule 6.4.

5.7. If there is an unclaimed extra shot, it is also possible (very rare) that the extra shot (usually indicated as a frame hit or miss) was caused by a piece of debris from an off-target miss or frame hit on an adjacent target (ricochet hit). In this case, the shot timings for the unclaimed shot may coincide with the shot timings for a frame hit on an adjacent target. If a ricochet hit is identified, nullify the unclaimed extra shot and count the 10 or 20 record shots fired by the competitor.

6. **Extra Shot(s), Rapid-Fire (Excessive Hits)**. In rapid-fire stages, extra shots can be caused by a crossfire(s) from another target or, in rare cases, by a ricochet or debris from another target. ROs should follow these steps:

6.1. Record the firing point number and confirm the complaint with the competitor and verifier.

6.2. If 11 hits are indicated in a rapid-fire series, obtain the log print with shot timings for the competitor's firing point and any adjacent targets where there are missing shots (insufficient hits) determine if there are any out-of-sequence shots that can be identified as crossfire shots. Nullify that shot and count the remaining ten (10) shots as the competitor's score.

6.3. If 11 hits are indicated in a rapid-fire series and a shot timing analysis cannot identify the crossfire shot, nullify the lowest value hit and count the remaining ten (10) shots as the competitor's score.

6.4. If 12 or more hits are indicated in a rapid-fire series and the crossfire shots cannot be identified, determine the total score for the 10 lowest-value hits and give the competitor the option of a) accepting that score or b) refiring the series as a range alibi. If the competitor refires, all shots in the series with excessive hits must be nullified and the score fired in the refire series must be counted.

7. **Failure of One or More Targets.** If the target(s) are not functioning (indicating scores) or there is an indication that the target is malfunctioning (failure to indicate a fired shot or shots) or scoring erratically, the following actions must be taken:

7.1. **Competitor Claims that the Target is Scoring Inaccurately**. This problem could occur if the rubber belt on targets with moving belts is not advancing, was installed incorrectly or when there is tear in the rubber belt. If this complaint is made, the RO and TO must attempt to determine if the rubber belt on that target is advancing properly and remains in good condition (check with a spotting scope). If the RO and TO determine that the rubber belt is not advancing properly, the competitor must be moved to a spare (hospital) target and allowed to refire the series in which the complaint occurred as a range alibi.

7.2. **Power Failure**. If there is a power failure and the targets stop working, the computer memory will have stored the shot data and scores for all shots fired, except for any shots that may have been fired between the power outage and a **CEASE FIRING** command. If there is a power outage during a slow-fire series, competitors must be allowed to complete the series they were firing within the time remaining when the **CEASE FIRING** command was given. Any shots fired after the power outage and before the **CEASE FIRING** command that were not scored and indicated on the competitor monitors or in the main computer must be nullified and refired. If there is a power outage during a rapid-fire series, all shots fired must be nullified and the complete series must be refired as a range alibi.