





**BSRC**

**Range Conducting Officer Course**

# BSRC RCO Course

This course has 8 learning outcomes:

- Understand the procedure for opening the range
- Be able to set up the range for firing
- Understand the BSRC and NRA Range regulations
- Be able to conduct and supervise BSRC ranges
- Know how to deal with problems arising from running the BSRC range
- Understand the procedure for fault finding on the moving and static targets
- Be able to carry out basic repairs to the targets and scoring computer
- Be able to close the range

## **Safety on the Range relies on individual responsibility and appropriate supervision**

In the manual there are details of the procedures and safety measures that are designed to ensure that the ranges are as safe as practicable for shooters and for third parties.

Shooting in the UK has an good reputation for safety because all participants should be aware of the potential for a serious incident

It is impossible to guarantee absolute safety in all situations. The RCO has the responsibility for the safety of those who shoot under their direction, as well as for any third party who might be at risk should things go wrong. However, it must be remembered that ultimately, safety on the range is dependent on the shooter himself.

# Why is Sporting Rifle is Different Target Rifle Shooting?

- Shooting may be through an '**arc of fire**' rather than in defined lanes
- The safety catch may not be in use
- The rifle may be held in the "**ready**" position with the muzzle raised
- A Sporting Rifle may use a **magazine**, integral or detachable
- Different firing positions may be used

# The Ranges



**The Running Deer  
Range**



**The Sporting Statics Firing Points**



**50 m Zero Range**

**The Mid Running Boar Range**



**HME Zero Lane.**



## **The Time Limit Running Boar Range**

- All of the ranges use a common backstop but rely on the field firing danger area behind the backstop
- The safety trace is calculated to ensure that rounds fired at the moving targets stay within the danger area
- The elevated starting position for moving target shooting must be strictly controlled as a shot fired from the elevated position may land outside the danger area

# Opening the BSRC Ranges

What are the  
responsibilities  
of the RCO?

# Opening the BSRC Range

This requires:

- Keys to be drawn from NRA office
- Ammunition and rifles to be booked out
- Radio communications with NRA to be checked
- BSRC log on procedure in the Clubhouse

# Setting up the BSRC range for firing

- Why do we need a set procedure?
- What do we need to do to activate the target systems?
- How do we check they are functioning correctly?
- How do we ensure the computer scoring system is working?

# Clear Range Procedure

- The RCO must ensure that the Range Area and the overall Danger Area are clear and that firing will not endanger persons or property.
- Because the RCO cannot see the Danger Area he must rely on the NRA Range Office to confirm that the Danger Area is clear.
- In turn, the NRA Range Office rely on the Pirbright Range Warden to confirm that the shared Danger Area is clear.

# Range Procedures

- A CRO will be appointed to be in overall charge. They will be a BSRC qualified RCO. Whilst they are “on duty” they will remain within the Range Area.
- They may be assisted by one or more Assistant ROs who may be delegated to take over duties of the CRO in the event of the CRO needing to leave the range

# Range Procedures

- When the CRO arrives at the range, they are responsible for opening up all Firing Points and the Motor Rooms and preparing all target systems for shooting.
- The CRO will check that the target tracks are clear of any obstruction and that there are no hard objects on the range area that might cause a ricochet.

# Range Procedures

- It is a feature of Moving Target Shooting that only one person is on the Firing Point of any range at one time. He will be supervised by a “Line Officer” (“Button Pusher”) who acts as assistant RO in lieu of the CRO.
- The appointed CRO remains in overall charge and coordinates the different ranges.

# Conducting and supervising the BSRC Range

# Personal Protective Equipment

- Suitable hearing protection **MUST** be used by all persons in the vicinity of the Firing Points. This includes all visitors
- Ear plugs alone are not sufficient protection for repeated high intensity impulse noise such as the sound from a Centre Fire Rifle.
- Eye protection is strongly recommended especially when using a Centre Fire rifle.

# BSRC Range Regulations

# Range Regulations

- The NRA issue Range Regulations cover all shooting on the NRA's ranges at Bisley, including the Sporting Rifle Complex which is managed by the BSRC.
- The BSRC issues its own Range Regulations which supplement the NRA Range Regulations.

# Range Regulations

- The Range Regulations detail the way in which shooting is managed and regulated.
- The Range Regulations spell out safety procedures and ammunition limits.
- Range Regulations take precedence over any other Rules, Regulations and Bye Laws.

# Range Procedures

- The CRO must be familiar with the current NRA Range Regulations (Range Orders)
- BSRC Range Regulations displayed on the Running Deer FP.
- The CRO must sign in at the Range Office and establish if there are any special conditions.

# Range Procedures

- From 1 January 2009 it is a requirement that anyone shooting on a MoD Range (including Bisley) MUST hold a certificate of competence issued by the Chairman of their club. The CRO is required to verify that all shooters hold a valid certificate.
- Anyone intending to shoot without a valid certificate of competence may be allowed to do so at the discretion of the CRO but only if he is supervised throughout on a one-to-one basis.
- Certificates are granted for shooting with broad categories of firearm and a certificate for a “telescope sighted rifle” may not necessarily mean that the holder is deemed competent to shoot on the Running Deer range.

# Range Procedure

- Firing will not be allowed to commence until the NRA Range Office have given their permission.
- RCOs must communicate with the NRA Range office to ensure it is safe to commence firing. The siren sounding is not enough
- Inform the NRA Range Office if shooting on the BSRC ranges interrupted for more than a few minutes.
- They **MUST** be informed before shooting recommences
- The radio channel must be monitored

Use the radio or telephone 9-152

# Range Procedure

- All shooting **MUST** cease when the NRA siren gives two long blasts at the end of the day and at the lunch break. Repeated blasts on the siren is a signal for all shooting to cease immediately.
- The CRO must ensure that all rifles are benched or grounded immediately, and then unloaded and cleared as soon as practicable.
- The RCO should ensure that shooting has stopped and that he has informed the Range Office **BEFORE** the siren sounds.

# Range Procedures

- Anyone going forward of the Firing Line (except to the Running Deer Motor Room via the protected path) will only do so under the protection of a Red Flag, and then only after the CRO has verified that all firing has ceased and that all rifles have been cleared and placed on the bench or removed from the firing point.
- The CRO or his nominated RO will not allow shooters to place their rifles on the Firing Line nor load nor fire until the Red Flag has been returned.

# Range Procedure

- No one should be allowed to go forward of the Firing Line until the CRO has established that all firing has ceased.
- Do not assume that because a Red Flag is displayed or that the Flashing Red Lights have been activated, firing will cease.
- RCOs MUST be aware of someone using the 50 m Zero Range (to the left of the Mid Boar Range).

# General Rifle Safety

- Rifles will NOT be placed on the Firing Point or handled on the Firing Point without the permission of the RCO, and never when persons are exposed forward of the Firing Point.
- Aiming and dry firing only with permission of the RCO and at a time and place when it would otherwise be safe to fire
- The Rifle Bolt may only be closed (or opened) on a live cartridge when the rifle is horizontal

# General Rifle Safety

- Rifles may be brought into the Firing Area cased or uncased. If uncased, they must be carried, and preferably racked, muzzle up.
- Except on the firing line, an uncased rifle must have the bolt removed or a breech flag in place.

# General Rifle Safety

- The rifle bolt must be open at all times when on the Firing Point except when actually shooting
- The shooter must unload his rifle and a second person check that the Action and Magazine are empty before it is removed from the firing point
- Rifles will not be removed from the Firing Point unless it is cased, the bolt has been removed and / or a breech flag is in place

This Rifle is Demonstrably Safe



Bolt Out

Breech Flag In

Magazine Empty (not good enough on its own)

This Rifle May or **May Not** be Safe

*[It cannot be seen to be safe!]*



If the bolt is closed the rifle must be presumed to be loaded.

# General Rifle Safety

- Because the last time the rifle was used may not have been on the range and it may not have been “cleared” by a second person, the shooter must take full responsibility for its safe condition when arriving on the range.
- The CRO has the right to examine any shooter’s rifle in the owner’s presence, to verify that it is safe.

# General Rifle Safety

- Misfire procedures must be followed
- The bolt must not be opened 30 seconds has elapsed
- Consider moving other shooters away
- The RCO must be aware of the danger of barrel obstructions

# Ammunition

- ROs must be aware of the ammunition limits placed on the BSRC ranges
- Full details are available in BSRC range orders
- Always be prepared to inspect ammunition if you are unsure
- Expanding ammunition may be used but generally only for zeroing/testing
- Be wary of wrong calibre in rifle. 243 in 308!

# General Rifle Safety

- Rifles and ammunition must not be left unattended.
- Taking the bolt when going forward to change targets is a NOT a substitute for proper security precautions
- Do not touch a rifle belonging to someone else except with their consent and preferably in their presence RCO?
- Secure rifles not required for immediate use
- If a rifle appears unattended the CRO may examine any rifle, make it safe, and take it to a place where it can be secured. It is preferable that any such action is witnessed by a second person

# The Running Deer Range

- The Rifle Bolt may only be closed (or opened) on a live cartridge when the rifle is horizontal and pointing towards the target.
- The RCO must ensure that the muzzle of a loaded rifle is not raised unnecessarily high.
- Shooting must only be from the normal firing point.

# The Sporting Statics Range

In the interests of safety on the Statics Range the CRO will ensure that no shooter:

- Fires from the prone position forward of the shooting benches (grass bank) unless there are at least two unused shooting lanes either side of his lane between himself and any shooter using the benches
- Fires from the sitting, kneeling or standing positions forward of the shooting benches (rubber mat) when the shooting benches are in use unless there is at least one unused shooting lane either side of his lane.

# Dealing with problems People and rifles

# Who is Permitted to Shoot?

- The law relating to firearms is complex. In general no-one may use or have possession of a firearm or its ammunition unless they hold an appropriate firearms Certificate or are a member of a Home Office Approved shooting club. Casual visitors will not be allowed to shoot unless they hold an appropriate Firearms Certificate or they are a full member of a Home Office Approved Club where they would be allowed to use that type of firearm.
- A Home Office Approved Club may also apply to hold an 'open day' during which non shooters known to the club may be invited to shoot under supervision. This is subject to prior notification and approval by the local Police. Those allowed to shoot under these concessions should be asked to sign a "Section 21 Declaration".

Negligent Discharge

Unintentional Discharges

# Negligent Discharge

- A negligent discharge has occurred when a shot has been fired, whether in a safe direction or not, without the order to fire, or after the order to stop firing, or after the order to fire has been given but in an unsafe direction.
- A negligent discharge will usually arise from a breach of safety rules.

# Unintentional Discharge

- An unintentional discharge has occurred when a shot has been fired when it is safe to do so and when the rifle was supported, pointing in a safe direction.
- It is important that the rifle is pointed towards the target whilst the bolt is being closed.
- An experienced shooter will open his bolt should there be even a minor interruption to the shooting.

# Unauthorised Discharges

- A negligent discharge is a disciplinary matter.
- An unintentional discharge should be dealt with in accordance with the rules of the competition.

# Dealing with problems

## Target issues

# Using the Electronic Scoring Targets (ESTs)

- On the Electronic Moving Target Ranges, the battery connections are interlocked with the target mechanism so that the range will not run unless it is correctly connected.
- It is important that the EST power supply is switched on in the Motor Rooms before the Computer at the Firing Point is 'booted up'. Otherwise the Computer may not recognize the target!

# Using the Electronic Scoring Targets (ESTs)

- Two makes of EST are in use. Both work on the same principle: an array of microphones is fitted behind the target face. When a bullet passes these microphones, the time difference in the sound reaching the microphones is converted into shot hole coordinates.
- Excessive damage to the rubber diaphragms used on the Running Boar and Statics ESTs “sound boxes” can cause an error.

# Using the Electronic Scoring Targets (ESTs)

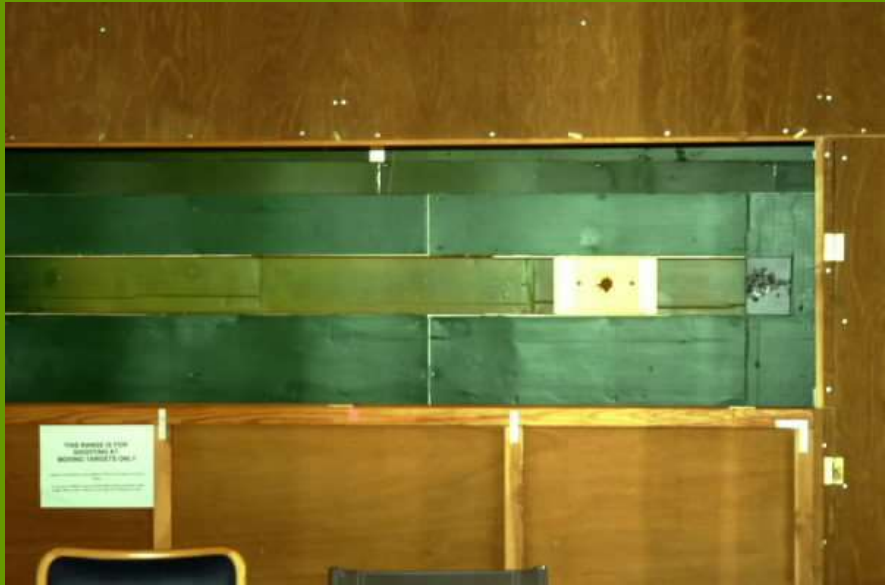
- Should there be a failure of an EST, no attempt should be made to effect repairs without expert help.
- Any fault or unusual occurrence with an EST should be reported to the BSRC as soon as practicable.

# Using the Electronic Scoring Targets (ESTs)

- The control units / printers for the Statics are kept in the Mid Boar Waiting Room. The power supply is switched on in the corner of that room. The control units must be taken out to the Firing Point and the cables connected to the sockets on the rear wooden wall.
- If the timer and lights are to be used they are connected to the socket on the left wall of the Firing Point.



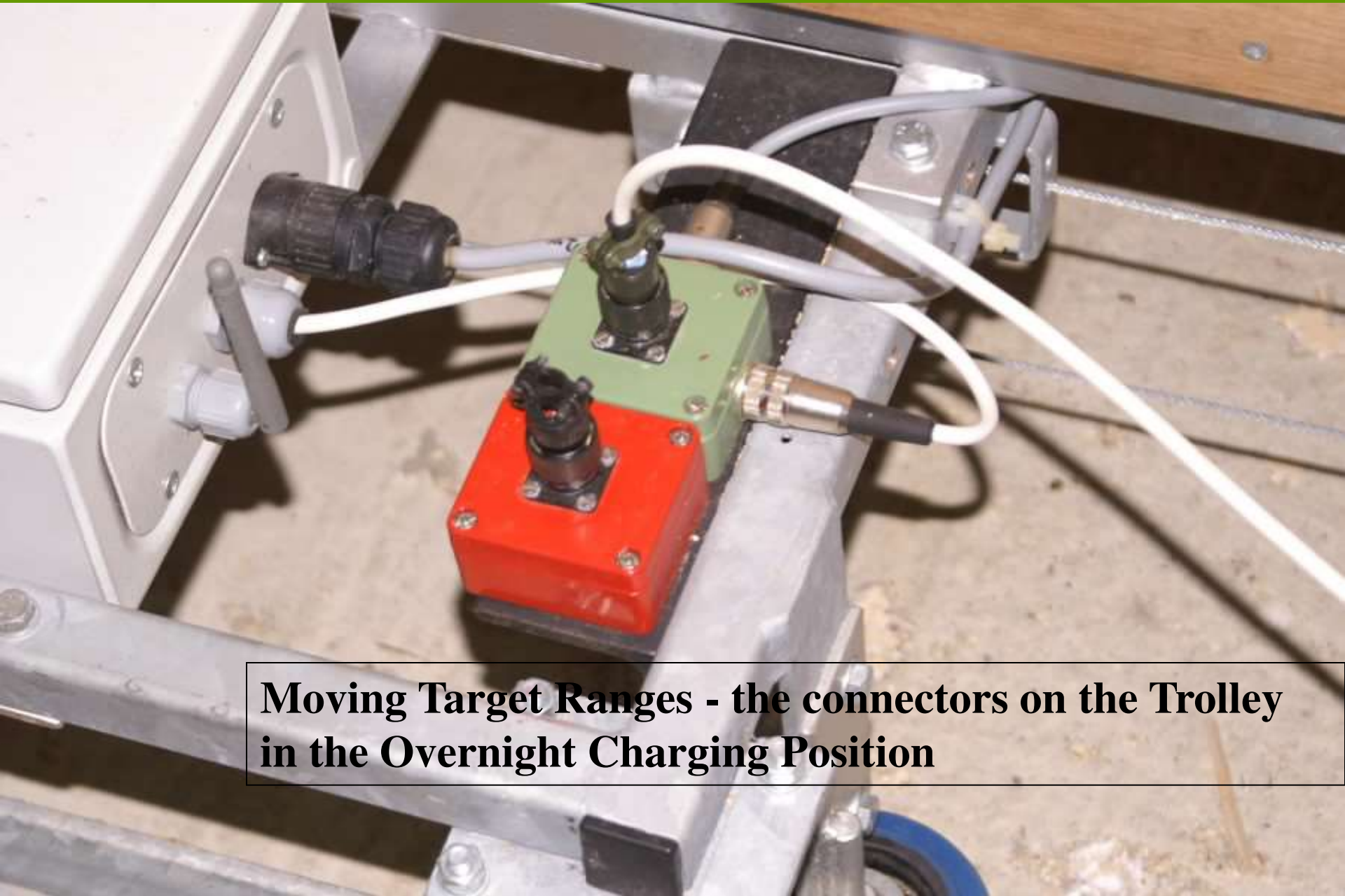
## The Electronic Scoring Targets





## The Electronic Scoring Targets





**Moving Target Ranges - the connectors on the Trolley  
in the Overnight Charging Position**

# The Moving Target Mechanisms

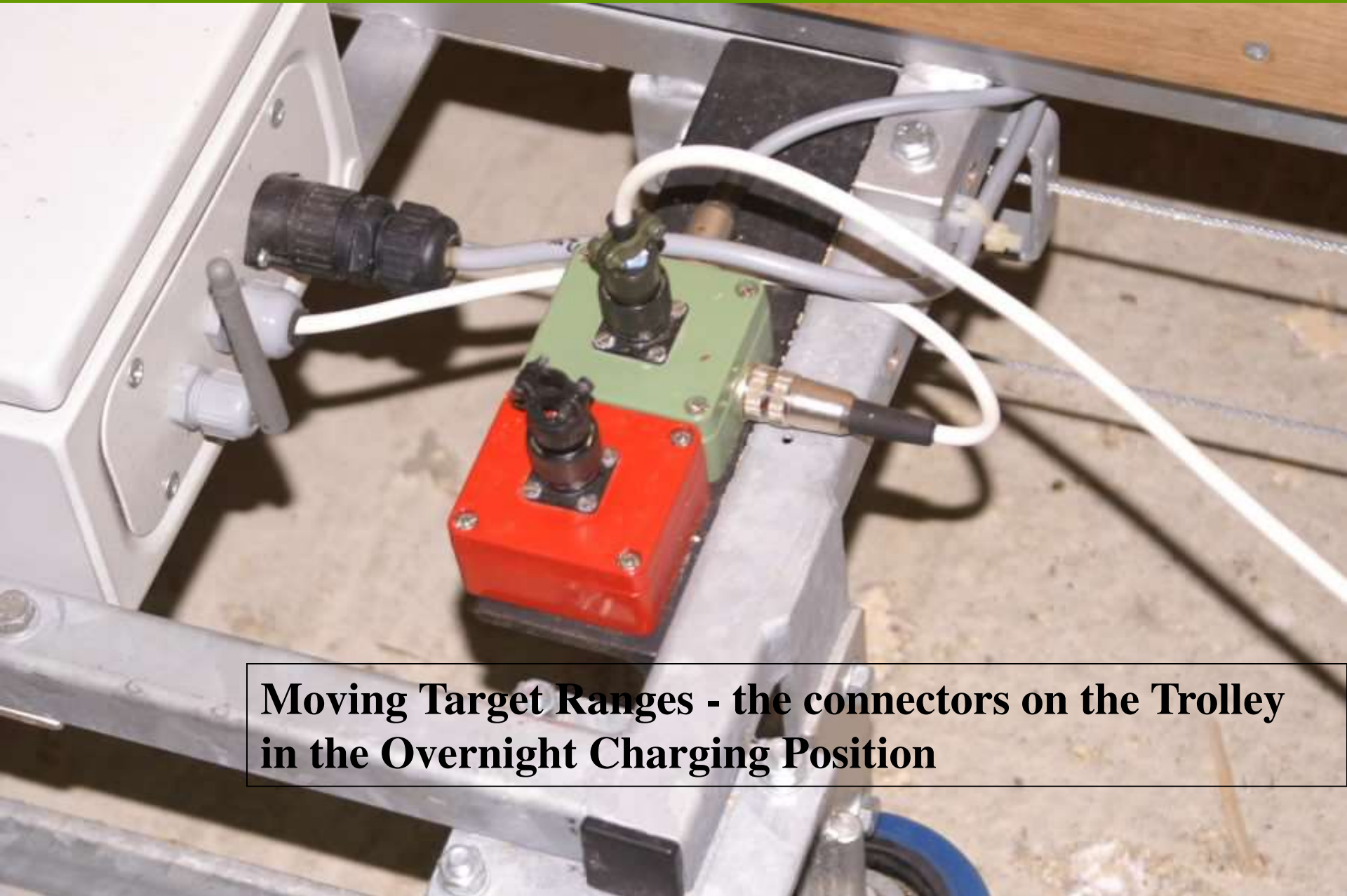
- The Moving Target Motor Rooms can be hazardous. Unless switched off the mechanism can operate at any time without warning.
- Unauthorised should not be allowed in the Motor Rooms at any time whilst firing is taking place or when the mechanism is switched on

# The Moving Target Mechanisms

- Should a Moving Target Range fail to run, it should be switched off at the earliest opportunity and the cause of the failure investigated.
- Under no circumstances should further attempts be made to operate the mechanism until the cause of the failure is known.
- A common cause of failure is mechanical jamming such as a derailed trolley. With very powerful drive units, considerable damage can be done unless the mechanical problem is cured.
- Any failure should be reported to the BSRC as soon as practicable.



Deer target with LOMAR board in view



**Moving Target Ranges - the connectors on the Trolley  
in the Overnight Charging Position**



**An Electronic Target in the Time Limit / Running Boar Range**



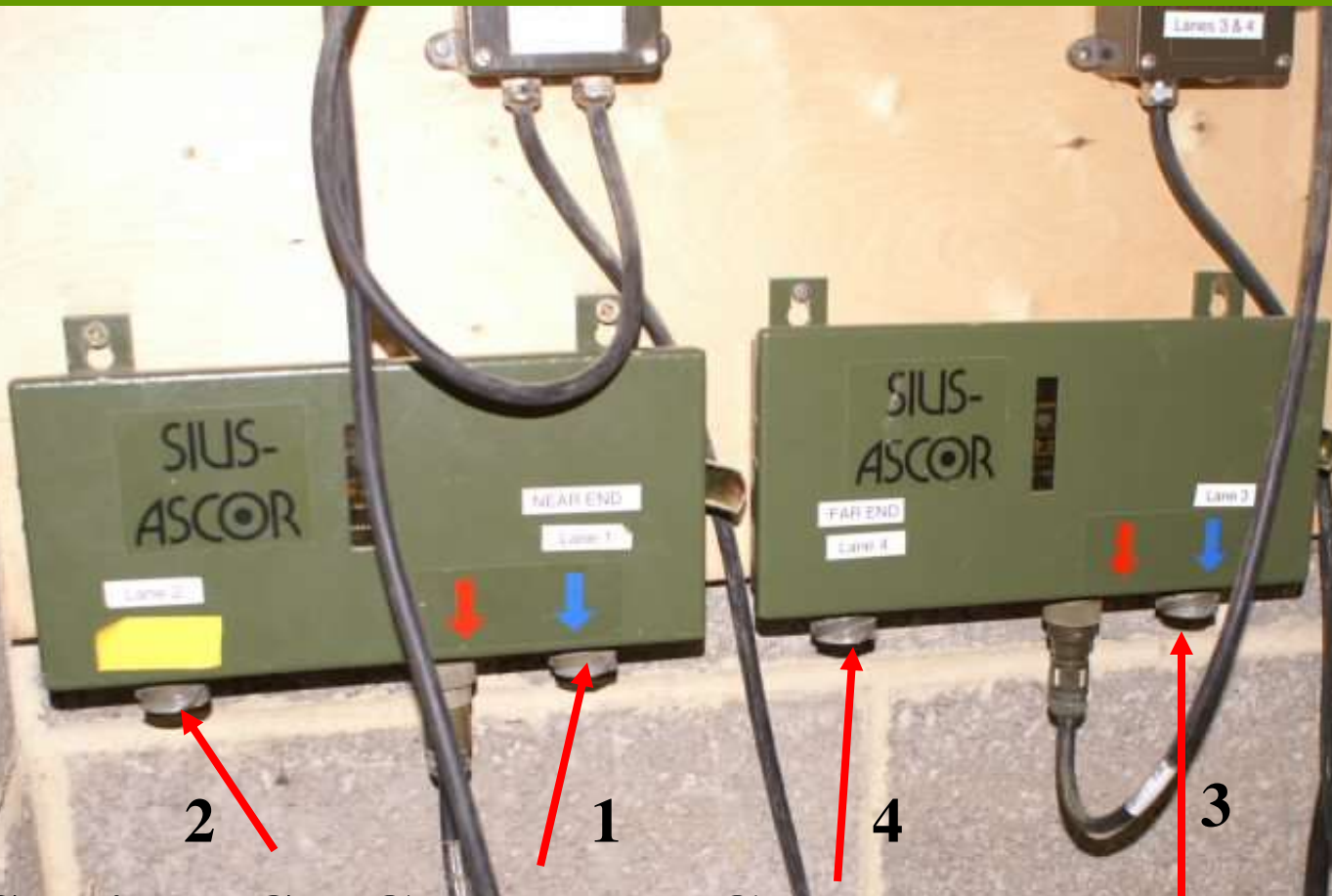
**The Sporting Statics Range**

# The Sporting Statics Range

- A variety of targets are used
- Currently Electronic Targets are available for the Roebuck, the Sitting Fox and the Standing Boar
- These targets are NOT intended for zeroing

# Using the Electronic Scoring Targets (ESTs)

- On the Statics, if the frames for the paper targets are in place they must be lifted out of their sockets and laid on the ground nearby in a safe place before the ESTs are wheeled out.
- The Statics ESTs are connected to the Firing Point via cables. These are colour coded for connection to the junction boxes near the door to the Target Shed.



**Statics EST Cables are Connected here**



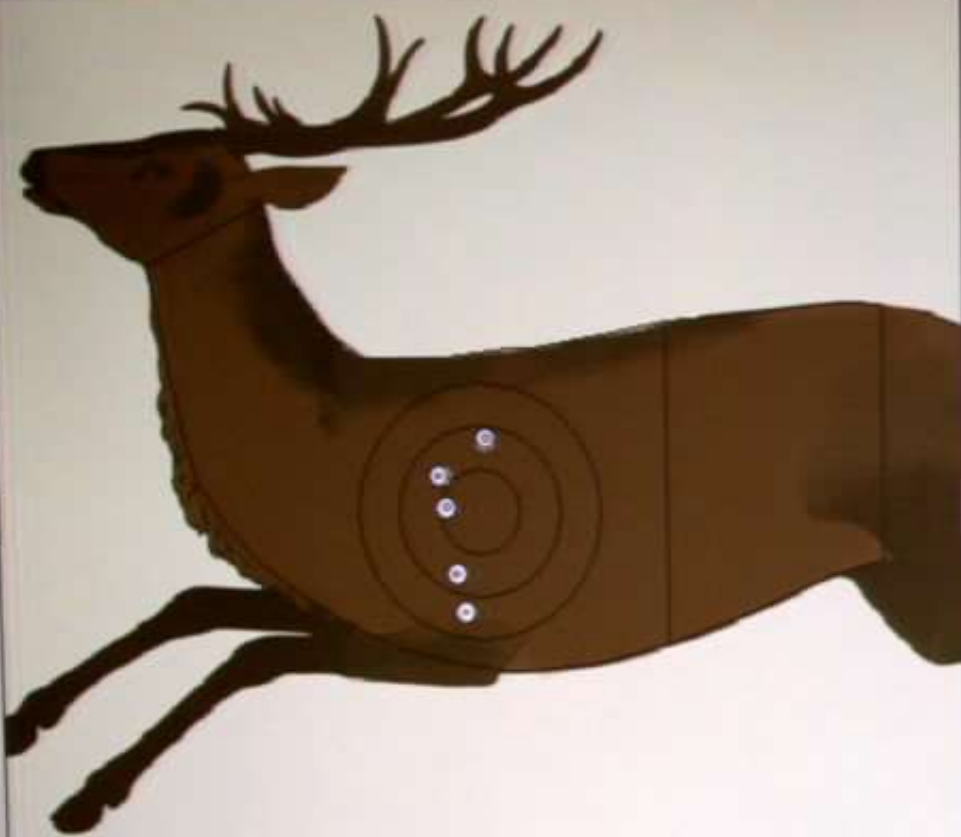
**Electronic Statics Targets Ready to be Wheeled Out**

# The “Time Limit” Range

- This range has facilities for shooting at static targets at <50 m firing using Rifles or Gallery Rifles in .22LR or “pistol” calibres.
- The Running Boar target **must** be switched off and the target trolley secured inside the Motor Room before any firing takes place on static targets.

13:44:28 Firing Point 1 - Offline Firing Point 1

10 Shot Test MATCH



Actual Shot Number: 11 Rings: 0

| Nr. | Rings | Pos. |
|-----|-------|------|
| 1.  | 5     | ← →  |
| 3.  | 4     | ← →  |
| 5.  | 4     | ↑ ↓  |
| 7.  | 3     | ↓ ↑  |
| 9.  | 4     | ← →  |
| 11. | 0     | ← →  |

Total Results Number: 10 Ring Total: 41

Rank: Average: 3.7

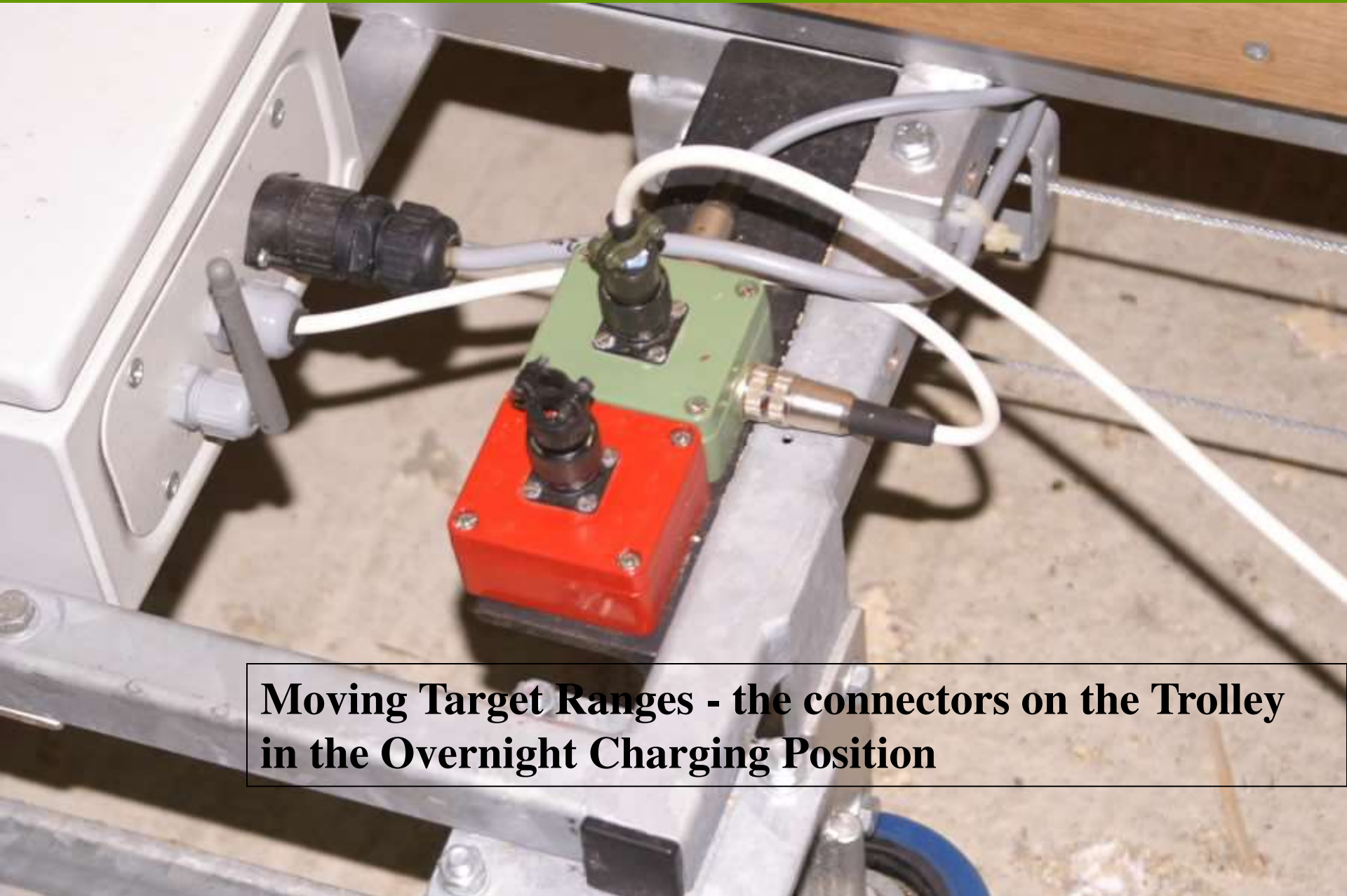
left going

start HAERING - ESA2002 13:44

The Running Deer EST Computer Screen

# Using the Electronic Scoring Targets (ESTs)

- On the Running Deer and Running Boar ranges power is supplied to the target electronics by a battery on the trolley which also supplies the radio link which send the signals to the computer.
- It is essential that the battery is correctly connected before the range is used and that the charger is reconnected when shooting is finished.



**Moving Target Ranges - the connectors on the Trolley  
in the Overnight Charging Position**

# Using the Electronic Scoring Targets (ESTs)

- The 10 m Running Target Range is permanently connected and only has to be switched on at the Firing Point. The range lights are switched on behind the range mechanism.
- The spooling of the black paper roll should be checked after each series. If the paper fails to move on between shots the scores may be wrong.

# Closing Down the Ranges

- At the end of shooting, the ranges must be closed and secured. The procedure is the reverse of opening up. The facilities should be left as you would wish to find them!
- All Moving Target mechanisms and the ESTs must be switched off. It is most important that the charging cables to the target trolley batteries are connected and chargers switched on.

# Closing Down the Ranges

- The CRO must sign out in the Range Office and return the Range Radio and any keys. It is important to remember that the Range Office closes 30 minutes after the end of shooting.
- Any range faults or deficiencies must be reported to the BSRC as soon as practicable