



**TRENTHAM MILITARY CAMP**

**SEDDON RANGE**

**RANGE STANDING ORDERS**

for use only by the

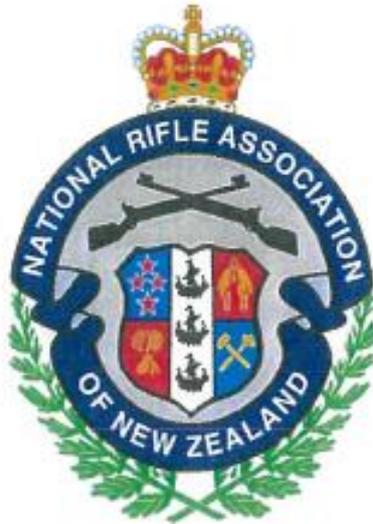
**National Rifle Association, the Wellington Rifle Association  
and its affiliated rifle clubs**

**Order Dated – 05 December 2018**

A handwritten signature in blue ink is positioned to the left of the printed name. The signature is stylized and appears to read 'JIM MAGUIRE'.

**JIM MAGUIRE**  
Major  
Officer Commanding  
Trentham Regional Support Centre

**01 July 2020**



### **Purpose of the Range Standing Order**

Trentham Military Camp Seddon Range Standing Orders have been produced specifically for the National Rifle Association of New Zealand, the Wellington Rifle Association and its affiliated rifle clubs use of Seddon Range located within the Trentham Rifle Range Reserve.

### **Consultation and Agreement**

Trentham Military Camp Seddon Range Standing Orders have been developed in consultation with the National Rifle Association of New Zealand, as the main body of the Wellington Rifle Association and its affiliated rifle clubs, who agree with the content and use as the controlling document when conducting live firing activities on Seddon Range. Live firing activities that are not described in this Range Standing Order are not permitted to be conducted on Seddon Range.

Name:

*Ross Mason*

Signature:

*Ross Mason*

Chairman of the National Rifle Association of New Zealand

Date:

*5 December 2018*

Seal:

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02	Wellington Rifle Association
03	Range Control Headquarters Trentham Regional Support Centre
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## TERMS and DEFINITIONS

The following terms and definitions used in these RSO are provided for clarification:

**Backsplash.** Is projectile fragmentation, target debris or impact surface material, which is thrown backwards at any angle towards the firing point as a result of projectile impact.

**Bullet Catcher.** A bullet catcher is a structure or receptacle, with or without a canopy, built to specific standards, which is placed behind the target line for the purpose of capturing the majority of rounds fired at each target.

**Note:** The Bullet Catcher on Seddon Range is an integral part of the Stop Butt (see Stop Butt below for details). The bullet catcher impact areas can be constructed from aggregate sand to a specific specification or from stone free soil, which is what is used on Seddon Range.

**Chief Butts Officer.** The Chief Butts Officer (CBO) is a person authorised and appointed by the NRANZ Council who is suitably experienced and qualified in accordance with NRANZ rules and regulations. The CBO is responsible for the overall conduct and safety of the marker personnel within the gallery or also termed as the “butts” during live firing.

**Chief Range Officer.** The CRO (CRO) is a person authorised and appointed by the NRA Council who is suitably experienced and qualified in accordance with NRA rules and regulations. The CRO is responsible for the overall conduct and safety on the range during live firing.

**Cone of Fire (CoF).** The Cone of Fire (CoF) is the distribution of fired projectiles within a margin of error in both vertical and horizontal planes. It also consists of the core distribution, unintentional aiming error, variable weather conditions, wind estimation error and wrong target error.

**Deputy Butts Officer.** The Deputy Butts Officers (DBO) is a person authorised and appointed by the NRA Council who is suitably experienced and qualified in accordance with NRA rules and regulations. The DBO is responsible for up to ten targets at any one time.

**Deputy Range Officer.** The Deputy Range Officer (DRO) is a person authorised and appointed by the NRANZ Council who is suitably experienced and qualified in accordance with NRA rules and regulations. The DRO is responsible for the safe conduct of a group of up to ten firers at any one time.

**First Strike.** Is the point where a projectile first strikes any surface after leaving the barrel.

**Gallery.** The gallery, also called the “butts”, is the concrete enclosure, behind and underneath the mantlet, designed to protect personnel when operating targets during live firing.

**Live Firing, Shoot or Firing.** Terms used to describe an activity during which live firing of rifles takes place.

**Mantlet.** The mantlet is a specifically shaped earth feature that is positioned above and forward of the markers gallery.

The CoF is lifted from the range floor by the mantlet thereby reducing the incidence of ground ricochet, the primary source of rounds escaping a range.

**Markers.** Personnel within the gallery (or also called butts) of the range, who conduct target marking and patching.

**Pop-over.** Is projectile or target debris, normally from previous firing which has been re-energised by subsequent projectile strike. Pop-over can also be high angle ricochet of a fired projectile.

**Post First Strike Hazards.** Post first strike hazards include ricochet, pop-over, splatter and backsplash.

**Range Axis.** Is a line at right angles (90°) to the line of the stop butt/bullet catcher.

**Ricochet.** Is the change in velocity and direction of a projectile or projectile fragment caused by its impact with any surface. A single projectile or projectile fragment may ricochet more than once prior to it coming to a complete stop.

**Spectators.** For clarification in this RSO, spectators are persons viewing, observing or watching live firing. Spectators may be guests or visitors that are not involved in the activity being conducted.

**Splatter.** Is projectile fragmentation or target debris that is thrown in all directions from the impact area.

**Stop Butt.** A stop butt is a structure built around or behind the bullet catcher to capture wide or high shot and ricochet off the range floor.

## LIST OF REFERENCES

- A. Defence Force Orders for the Army (DFO (A)) Volume 7 – *Training*, Book 5 – *Live Firing Ranges*.
- B. JSP 403 - Handbook of Defence Land Ranges Safety, Volume 2 – Design, Construction and Maintenance of Small Arms, Infantry Weapons Systems and 40 mm Weapons Systems Ranges, Edition 3, Change 6, Amendment 2, February 2013.
- C. Health and Safety at Work Act 2015.

## CHAPTER 1 – RANGE STANDING ORDERS

1. **Purpose.** Range Standing Orders (RSO) are required to ensure that:
  - a. All necessary precautions are taken to prevent accidents to range users.
  - b. All necessary precautions are taken to prevent danger to the public.
  - c. Maximum use is made of available range space.
  - d. Only authorised rifles and ammunition that are described in this range standing order may be used on the range.
  - e. Only authorised activities that are described in this range standing order may be conducted on the range.
  - f. All activities are conducted in accordance with these RSO and the National Rifle Association of New Zealand Technical Rules and Regulations for Fullbore Target Rifle Shooting dated 2009 (Edition 5 – May 2017).
  - g. All personnel are briefed on the amenities provided.
2. **Production and Amendments.** In accordance with the NZDF Volume 7, *Training*, Book 5, *Live Firing Ranges*, Chapter 2, Section 2, Paragraph 2202, the Officer Commanding Trentham Regional Support Centre (OC TRSC), as the range controlling authority, is responsible for the production and amendments of RSO.
3. **Control.** All copies of Seddon Range RSO that are not dated 05 December 2018, Amdt No 01/19, are null and void and are not to be used. Any out dated copies that are held or discovered are to be destroyed.
4. **Distribution.** Copies of Seddon Range RSO are to be distributed by the range controlling authority.
5. **Contradictions.** If Seddon Range RSO contradicts the content of other references or that of paragraph 1.f. above, then this order is to take precedent. Where it is identified that a contradiction exists between this order and other references, the contradiction is to be brought to the attention of the range controlling authority. The range controlling authority is to be prepared to justify the range standing order as and when required. All RSO contradictions are to be annotated with “(this contradiction to *name of the reference* has been authorised by the range controlling authority)”.

## CHAPTER 2 – SEDDON RANGE STANDING ORDERS

6. **General Content.** The NRANZ have been granted a New Zealand Defence Force (NZDF) Licence, dated 22 August 2011 for the use of Seddon Range to conduct deliberate fullbore rifle static target shooting activities only.

7. This Range Standing Order (RSO) has been produced for the use of Seddon Range by the National Rifle Association of New Zealand (NRANZ), the Wellington Rifle Association (WRA) and its affiliated rifle clubs, namely:

- a. Karori Rifle Club,
- b. Petone Rifle Club,
- c. Trentham Rifle Club.

8. Seddon Range RSO are provided to ensure all NRANZ and WRA Range Officers are aware of the safety requirements and restrictions applied to the range when conducting live firing activities.

- a. It is a requirement of NZDF and NRANZ that all NRANZ and WRA Range Officers, including Chief Range Officers and Deputy Range Officers, are to read and understand this RSO.
- b. A copy of this RSO is to be available to the CRO and DRO on the range at all times when live firing is being conducted.
- c. The CRO and/or DRO are to know the location of this RSO when on the range before live firing commences.

9. This RSO is not approved for use by any other club, agency or organisation that are not listed in paragraph 7 above. However, national and international competitors that are not members of the above associations or clubs are permitted to compete in NRANZ hosted live firing activities being conducted on Seddon Range. The NRANZ is responsible for ensuring that these competitors are of an acceptable standard to safely conduct live firing and that they will abide by this RSO and the NRANZ rules and regulations.

10. **Name.** Seddon Range.

11. **Location.** Seddon Range is located at Trentham, Upper Hutt, within an area known as the Trentham Rifle Range Reserve. The Trentham Rifle Range Reserve is defined as a Class II (2) Reserve (Rifle Range) being part of Section 936, Block I, Rimutaka Survey District S.O. 32449. The Trentham Rifle Range Reserve (also referred to as the Trentham Defence Area) is vested to the Minister of Defence (NZ Gazette dated 03 November 1903, page 2378).

- d. Map Ref: NZ Topo 50 series – BP32 and BQ32.
- e. Grid Ref: Lat: 41.15240. Long: 175.04053.

12. **Control.** The land on which Seddon Range stands is a Defence Area, which is under control of the Chief of Defence Force. All users of the land, including licensed civilian clubs, are bound by Part III of the Defence Regulations 1990.

13. **Range Description.** Seddon Range is an imperial 1,000 yard open outdoor non-standard Gallery Range containing a maximum of 50 x target/firing lanes and covers an

area of 21.92 hectares. The range has an NZDF authorised non-standard purpose-built gallery range air danger height dispensation applied (Reference: Minutes of the Meeting held between the NRANZ and NZDF on 21 Feb 03).

- a. **Stop Butt/Bullet Catcher.** The projectile impact areas of the stop butt/ bullet catcher combination is covered with stone free soil to the specified depth. The remainder of the stop butt is grass covered earth. The stop butt is slightly curved (concaved towards the marker gallery) across its entire front face width, which is within the required specification.
  - b. **Target Frames.** Cantilever type target frames are used to hold NRANZ authorised targets. The frames are counter weighted to ease manual operation and have spring loaded locking mechanisms to secure the frame and target at the correct height. The locking mechanism is released by activation of a pull-cord attached to the frame.
  - c. **Mounds.** Firing mounds are located at 300yd, 300m, 500yd, 600yd, 800yd, 900yd and 1,000yd distances from the target line.
  - d. **Minimum Firing Distance.** To maintain the extreme end limit of the range danger area on approved property (NZDF and the Southern Hills Reserve), the minimum authorised firing distance is from the 300yd mound only. Live firing from any area forward of the 300yd mound is prohibited.
  - e. **Access to the range.** Access to the range is via the entrance gate located centrally forward of the 1,000yd mound.
  - f. **Vehicle Parking.** Vehicle parking is permitted by firers and spectators behind each firing mound that is in use. Vehicles are not permitted to be parked closer than 20m from a mound.
  - g. **Toilets.** Three permanent toilets are located on the range. One toilet is located within the markers gallery target shed. One toilet block is located behind the northern end (golf course side) of the 300m mound and another toilet block is located behind the northern end of the 600yd mound.
14. **Range Classification and Range Danger Area.** Seddon Range is classified as a 1,000yd Non-Standard Gallery Range with a Limited Danger Area applied. As described in JSP 403 Vol 2 Chapter 2, page 9, "A Limited Danger Area (LDA) Range is an open range for which the design requirements are to capture shot so that any resultant ricochet remains within the Range Danger Area". Seddon Range danger area extends from the furthest firing mound to approximately the crest of the eastern hill feature behind the range.
- a. **Air Danger Height Dispensation.** (Reference: Minutes of the meeting held between the NRANZ and NZDF dated 21 February 2003).The current range danger area length has been reduced by the application of Comparison of Residual Energy Air Danger Height Dispensation. This was authorised by Weapon and Range Safety Branch NZDF to maintain the full extension of the range danger area within NZDF property and the Southern Hills Reserve of the

Upper Hutt City Council. Attached at Annex A to this Chapter is a contoured image of Seddon Range with the Range Danger Area applied.

15. **Designated Airspace.** A permanent designated airspace has been established over the Trentham Rifle Range Reserve, including Seddon Range, by the Civil Aviation Authority under rule 71.16, which operates 24 hours per day. The airspace designation is NZD621 (NZ Danger Area), which extends from the ground surface to an upper limit of 1500 feet above sea level. The purpose of the airspace designation is to warn aircraft of the potential danger of flying into a danger area.

- a. **Civil Aviation Authority Contact.** For the purpose of reporting:
  - (1) **Low Flying Aircraft.** Civil Aviation Authority is to be contacted on 05 0847 2338. This number is manned Monday to Friday and operates via voicemail during weekends and public holidays. Additionally an email can be forwarded to: [isi@caa.govt.nz](mailto:isi@caa.govt.nz).
  - (2) **Aircraft Accidents Causing Injury.** If a person is fatally or seriously injured as a result of being in an aircraft or in direct contact with an aircraft or an aircraft that has crashed, contact is to be made with the Rescue Coordination Centre (RCC) 0508 222 433. This number is manned 24 hours a day, seven days a week.
  - (3) **Duty Complex.** In any event, report the aircraft intrusion or accident to the TRSC Duty Complex on (04) 527 5115. See paragraph 35.e. – Intrusions for details.

16. **Livestock.** Due to deterioration of the range ballistic features, the grazing of livestock on any part of Seddon Range is not authorised.

17. **Range Danger Signage.** Range Danger Signs are provided on all Trentham Ranges to warn persons who are not familiar with range protocols and associated hazards that they are about to enter a live firing range. Seddon Range has Range Danger Signs located at the following points:

- a. On the northern grassed area of the entrance road, behind the 1,000yd mound, adjacent to the NRANZ Headquarters.
- b. On the northern side (golf course side) fence line between the 900yd and 1,000yd mounds.
- c. On the northern side of the 600yd toilet block.
- d. On the south-eastern side of NZDF property (boundary of NZDF and Corrections properties) a steel cable is erected across the width of the flood channel that extends along the southern side of Seddon Range. An NZDF Warning Sign (warning of entering a live firing range and prohibiting persons movement passed the sign) and NZDF property signs are attached to the steel cable.

- e. Below is an image of a Range Danger Sign used on Trentham Ranges.



*Range Danger Sign Used on Trentham Ranges*

18. **Range Safety Certificates.** An NZDF Range Safety Certificate has been produced for NRANZ use of Seddon Range. The current safety certificate is located in one of the clear plastic envelopes on the green coloured Seddon Range sign adjacent to the NRANZ Headquarters.

- a. **Expiry.** In accordance with Reference A, range safety certificates expire at 2359 hours on 30 June of each year.
- b. **Suspension.** Suspension of range safety certificates by the range controlling authority will occur immediately upon the following:
  - (1) When an entire range structure fails to meet the minimum design specification.
  - (2) When any activity occurs that is not authorised by Seddon RSO or by the range controlling authority.
  - (3) On the occurrence of any serious injury incident or event that requires notification to a regulatory external to NZDF.

19. **Range Audits.** Audits of propose-built ranges controlled or used by NZDF (including NZDF controlled purpose-built ranges used by civilian firing associations and clubs, and non-NZDF Ranges used by NZDF) are to be completed in accordance with the following scheduled audits:

- a. **Daily Check.** When range is in use, a daily check is to be carried out by the Range Officer before live firing commences. This check is to ensure that the range is being presented in good order and is in all respects fit and safe for use.

- b. **Three Month Audit.** A three month audit of each range is to be arranged by the range controlling authority. The audit is to ensure the continued use of the range is deemed safe, it is being maintained to an acceptable standard of cleanliness, it is in good order and that maintenance requests are submitted promptly and are followed up until completed. The range controlling authority may require more frequent audits during periods of high use.
- c. **Annual Audit.** An annual audit is to be arranged by the range controlling authority. The annual audit is to be conducted in the May to June period of each year. To ensure that a new Range Safety Certificate is issued before the current Range Safety Certificate expires, the annual audit is to be completed by 30 June each year.
- (1) **Record of Annual Number of Rounds Fired.** To assist with annual audits in identifying the condition of bullet catcher impact area of the stop butt for de-leading purposes, an annual record of the number of rounds fired in each firing lane are to be collected from the WRA and its affiliated clubs and provided to the NРАНZ for forwarding to Range Control HQ TRSC, no later than 30 May of each year.
- d. **Five Year Audit.** A five year audit of purpose-built ranges controlled or used by NZ Army (including NZ Army purpose-built ranges used by civilian firing associations and clubs, and non-NZDF ranges used by NZ Army) is to be completed by the Weapons and Ranges Branch NZDF. So long as the five year audit is completed between May and June it may be considered as annual audit for that year.
- e. **Unscheduled Audits.** Unscheduled range audits are to be conducted on occurrence of:
- (1) Immediately following any serious injury and/or significant damage to equipment.
- (2) Any time the Range Safety Certificate is suspended because an entire range structure fails to meet the minimum acceptable specification.
- (3) On direction of the range controlling authority.
- f. **Scheduled Audits.** Weapons and Range Safety Branch NZDF will conduct special audits prior to the use of the following:
- (1) Prior to a live firing trial or demonstration of a weapon, ammunition or laser device that is not in-service.
- (2) Introduction into service of a weapon, ammunition or a laser device, which does not meet the design limitations of the range.
- (3) Introduction of a new firing practice or firing system that does not meet the design limitations of the range.

(4) Whenever it is considered that use of the range is unsafe.

20. **Range Auditing Officers.** Live firing may only be conducted on NZDF controlled ranges that have been declared safe by Weapons and Range Safety Branch, or an appointed Range Auditing Officer. Range auditing officers are to be appointed by the relevant controlling authority and have attended a Range Advisory Officers Seminar conducted by Weapons and Range Safety Branch within the previous five years.

21. **Associated Publications.** Publications to be read in conjunction with these RSO are:

- a. Minutes of the meeting held between the NRANZ and NZDF dated 21 February 2003,
- b. Memorandum of Understanding between NRANZ and NZDF, dated 18 August 2011,
- c. NRANZ Range Licence, dated 22 August 2011,
- d. NRANZ Technical Rules and Regulations for Fullbore Target Rifle Shooting dated 2009 (edition 5 - May 2017).
- e. NRANZ Markers Code of Conduct and Marking Procedures dated December 2016.

22. **Cone of Fire.** The NRANZ Cones of Fire (CoF) table, attached at Annex B to this Chapter, were developed by the NRANZ in consultation with Weapon & Range Safety Branch NZDF. These CoF are the only authorised CoF approved for use by the NRANZ, WRA and its affiliated clubs on Seddon Range. The CoF consists of the core distribution, unintentional aiming error, variable weather conditions, wind estimation error and wrong target error.

23. **Ballistic Safety Maintenance Schedule (BSMS).** In accordance with Reference A, a BSMS is to be implemented for Seddon Range. As this is an NZDF requirement, TRSC Range Control is the point of contact for any BSMS issues. Attached at Annex D to this chapter is the BSMS.

24. **Maintenance and Environmental Management Plan (MEMP).** In accordance with Reference A, a MEMP is to be implemented for Seddon Range. As this is an NZDF requirement, TRSC Range Control is the point of contact for any MEMP issues.

25. **Points of Contact.** The following is provided for contact purposes:

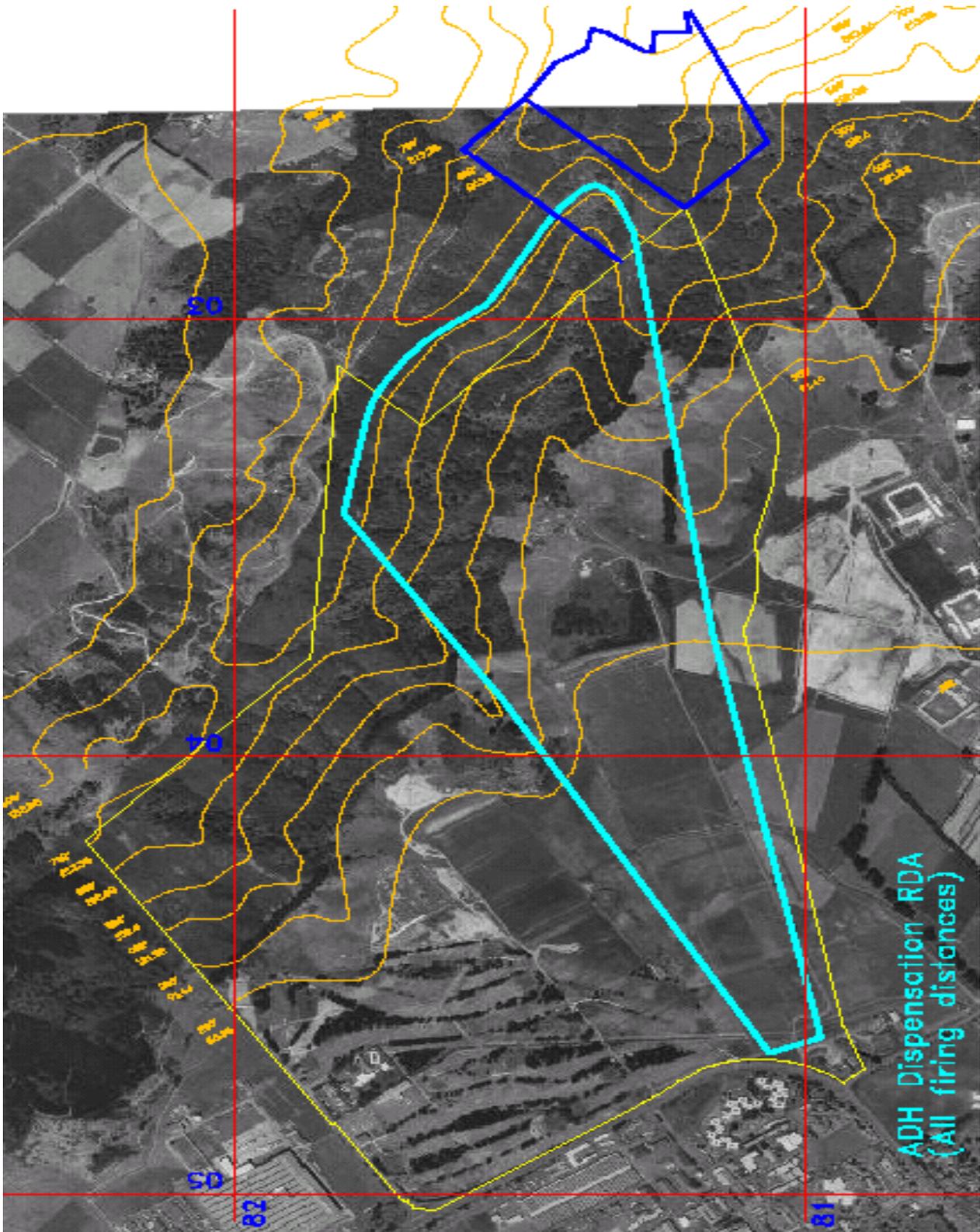
- a. **TRSC Range Control.** For daily range administration and range bookings, contact can be made with Range Control HQ Trentham Regional Support Centre on (04) 527 5135 or 027 292 9883.
- b. **TRSC Duty Complex.** For reporting emergencies, intrusions into the range or its danger area, uplifting range keys and general enquiries, contact can be made with the Duty Complex on (04) 527 5115.

**Annexes:**

- A. Image of Seddon Range Danger Area
- B. National Rifle Association of NZ Cones of Fire Table
- C. Aerial Image of Seddon Range Features
- D. Seddon Range Ballistic Safety Maintenance Schedule

**SEDDON RANGE DANGER AREA**

Image of Seddon Range with the Danger Area overlaid



### NРАНZ AND WRA AUTHORISED CONES OF FIRE

The below table provides the authorised Cones of Fire (CoF) for approved National Rifle Association of NZ, Wellington Rifle Association and its affiliated clubs firing activities. The CoF consists of the core distribution, unintentional aiming error, variable weather conditions, wind estimation error and wrong target error.

Serial	Distance (yd)	Total CoF (mils)		Total CoF (metres)	
		Elevation	Azimuth	Elevation	Azimuth
(a)	(b)	(c)	(d)	(e)	(f)
1.	300	+ 3 - 5.95	+/- 31.25	+ 0.82 - 1.63	+/- 8.57
2.	500	+ 3 - 3.76	+/- 22.75	+ 1.37 - 1.68	+/- 10.40
3.	600	+ 3 - 3.56	+/- 21.62	+ 1.65 - 1.95	+/- 11.86
4.	800	+ 3 - 3.42	+/- 25.76	+ 2.19 - 2.50	+/- 18.84
5.	900	+ 3 -3.37	+/- 26.12	+ 2.47 - 2.77	+/- 21.49
6.	1000	+ 3 - 3.33	+/- 26.81	+ 2.74 - 3.04	+/- 24.51

**Note:**

2 x target wrong target engagement factor is applied for short ranges (300yd-600yd), and 3 x target wrong target engagement factor is applied for long ranges (800yd-1,000yd).

### SEDDON RANGE FEATURES

Aerial image depicting Seddon Range features



## CHAPTER 3 - PLANNING

26. **Primacy of Use.** In accordance with the NRANZ Licence, Seddon Range may be used by both the NRANZ and NZDF. NZDF may also permit other organisations to use the range providing that such permission will not be extended to other civilian firing clubs without prior NRANZ consent. In normal circumstances the following is applied:

- a. **NRANZ Use.** The NRANZ have primacy of use during weekends and public holidays, less Christmas Day and Good Friday of each year due to the significance of these days.
  - (1) An exemption to conduct live firing on Christmas Day and/or Good Friday may be granted only under special circumstances. To provide considerations for an exemption, a written application is required to be forwarded to Range Control HQ TRSC.
- b. **NZDF Use.** NZDF may use Seddon Range for both live and non-live activities.

27. **Range Access (NRANZ and NZDF Emergency Demolitions).** In accordance with the NRANZ Licence, *“The Club shall at all times obtain the Crown’s permission prior to entering the Range”*. This maintains the required security of the Trentham Defence Area and it also provides a safe environment for NRANZ and NZDF personnel or contractors who may be operating within or on an adjacent area. If NZDF personnel or NZDF employed contractors are operating within the range or its danger area or on an adjacent range, the NRANZ will be notified accordingly.

- a. **NRANZ Access.** NRANZ access is divided into three categories:
  - (1) **Live Firing.** For NRANZ and WRA (and its affiliated rifle clubs) requiring access to conduct normal target live firing activities.
  - (2) **Range Maintenance.** NRANZ and/or the WRA requiring access to conduct range maintenance.
  - (3) **Contractors.** NRANZ employed contractors requiring access for NRANZ planned works on the range.
- b. **NZDF Emergency Demolition Access.** NZDF use of the Demolition Range (located in an easterly direction behind Seddon Range) for the purpose of disposing of improvised devices, obsolete munitions or unstable materials. This action is commonly referred to as “Emergency Demolitions”, which may occur at any time. In such circumstances, any user on Seddon Range at the time will be advised of the situation and asked to cease activities and leave the range as quickly as possible to permit the emergency demolition to proceed. Once the disposal has been completed and the “all clear” has been provided by the NZDF Demolition team, the original user may return to Seddon Range and resume activities.

28. **Range Bookings.** To maintain the appropriate safety required for all personnel operating within the Trentham Defence Area, ranges and adjacent areas are required to be booked prior to access. The booking of Seddon Range for NRANZ use is divided into three categories:

- a. **Weekends and Public Holidays.** An annual programme of planned firing events is produced by the WRA and submitted to Range Control TRSC through the NRANZ Secretary each year. Seddon Range is then booked in accordance with the WRA programme with the exception of Christmas Day and Good Friday as provided in paragraph 26.a. to this Chapter.
  - (1) The entry times for this category are provided in the WRA Firing Programme, which provides varying range key uplift times, range preparations and live firing times with target engagement distances. The usual range key return time is 1700 hours, however, this may be extended under special circumstances.
- b. **Range Maintenance.** Range maintenance bookings are submitted by the NRANZ Range Director to Range Control HQ TRSC. Range maintenance usually occurs between 0830-1600 hrs on each Wednesday.
- c. **Contractors.** If NRANZ employed contractors are required to access Seddon Range, the range is required to be booked in the same manner as above by providing an email to Range Control HQ TRSC with the following details:
  - (1) Name of the Contracting Company,
  - (2) Name(s) of the individual(s) of the Contracting Company who is/are tasked to enter the range (i.e. required to uplift the range keys).
    - (a) The above individual(s) is/are required to produce photo identification when uplifting/signing for the range keys from the Camp Duty Complex.
  - (3) Date(s) and time(s) of expected range key uplift and return.
    - (a) It is the responsibility of NRANZ to provide the Contracting Company the above information prior to being tasked to uplift the range key.
- d. **Trentham Military Camp Closedown Period.** During the Camp closedown period, which is usually between the last two weeks of December and the first week of January of each year, Seddon Range will be booked for NRANZ access and use. Any changes or additional bookings are required to be submitted to Range Control HQ TRSC prior to the Camp closedown period to enable the booking to be actioned.
  - (1) **Closedown Period Notification.** Range Control HQ TRSC will provide the dates of the Camp closedown period of each year to the NRANZ Secretary.

29. **Range Keys.** Seddon Range keys are located and issued from the Trentham Camp Duty Complex. The Duty Complex is located at the entrance to the Camp, on the western side of the double barrier arms. The range key is issued in a red coloured small metal ammunition container. Additionally, one Safety Net Radio will also be issued. To uplift the range key from the Camp Duty Complex, the following is required:

- a. **NRANZ, WRA and Affiliated Club Range Officers.** Through the appropriate booking, NRANZ, WRA and its affiliated club Range Officers requiring access to Seddon Range are to provide and show their club membership cards to either Camp Security staff or Military Orderly personnel.
- b. **Key Register.** The Range Officer is then required to complete the relevant sections of the Trentham Military Camp Key Register in clear handwriting when uplifting the range key. The table below provides an example of the required detail to be completed in each column of the key register. Incomplete sections or ineligible writing may result in refusal of being issued the range key.

Trentham Military Camp Key Register									
Key	Time Out	Unit	Rank /Title	Name	ID Card No	Signature	Date In	Time In	Return By
<i>Seddon</i>	<i>Time of the key uplift.</i>	<i>NRA or WRA</i>	<i>Mr</i>	<i>Surname</i>	<i>Photo ID No or Membership Card No.</i>	<i>Signature of the person uplifting the key.</i>	<i>Date of the key return.</i>	<i>Time of the key return.</i>	<i>Initials and surname of the person returning the key.</i>

30. **Range In Use Board.** When the range keys have been issued, the Range Officer is required to enter his or her name in the “Seddon / Dems” section of the Range In Use Board (white board) located on the northern wall of the Duty Complex. The Range Officer’s mobile phone number may also be entered, however it is not mandatory. This board provides quick reference to the Security and Orderly Staff as to who is on what range and when.

31. **Range Indication Board.** An indicator board is located outside the main gate of Trentham Military Camp. The board is available for use by authorised range users to indicate range usage. The indicator board is not an element of the range safety plan. (Note: Access to all ranges is prohibited to unauthorised members of the public at all times). The indicator board, if used, should be operated as follows:

- a. When uplifting the range key move the “Seddon Range” slide to “in use”.
- b. When returning the range key move the “Seddon Range” slide to “not in use”.

32. **Safety Net Radio.** Handheld safety net radios are issued to all users when uplifting range keys when conducting activities within the Trentham Defence Area. The Camp Duty Complex personnel are to establish that the radio is functioning prior to issue. The use of the radio is to provide quick communications between the user and the Camp Duty Complex for:

- a. Advising when live firing is to commence and cease,

- b. Medical or fire emergencies requiring emergency services,
- c. Accidents or incidents on the range,
- d. If intruders are found to be on the range or within the range danger area.

33. **Use of the Safety Net Radio.** The use and location of the safety net radio is the responsibility of the Chief Range Officer (CRO) and is to be kept on the person so as to be heard and for quick response if called. If the CRO is required to undertake another role or is to leave the range, the radio is to be passed over to another Range Officer (RO). The following detail is the user requirements for the operation of the safety net radio by the CRO when conducting live firing activities on the range:

- a. **Channel.** The radio is to be operated on channel three (3) only.
- b. **Callsigns.** The below callsigns are to be used:
  - (1) "Duty Complex" when contacting the Duty Complex.
  - (2) "Seddon Range" when the Duty Complex is contacting the NRANZ, WRA or its affiliated clubs.
- c. **Commencement of Live Firing.** The CRO is required to contact and advise the Camp Duty Complex when live firing is about to commence.
- d. **Cessation of Live Firing.** The CRO is required to contact and advise the Camp Duty Complex when live firing has ceased.
- e. **Radio Checks.** The Camp Duty Complex may conduct random radio checks to ensure communications are being maintained.

34. **Medical, Health and Hygiene.** The NRANZ, WRA and its affiliated clubs are responsible for the following medical, health and hygiene requirements when conducting any live firing activity on Seddon Range.

- a. **First Aider.** In case of minor injuries and medical emergencies, a qualified first aider is to be present on the range for the duration of NRANZ and/or WRA live firing activities.
- b. **First Aid Kit.** An adequate First Aid kit to cover common injuries associated with the use of a live firing range are to be available on the firing mound and within the markers gallery (if manned) during all live firing activities. Each First Aid kit is to be checked periodically to maintain the required items due to use and expiry. The location of the First Aid kit is to be made known to all present on the range, which is to be included in the pre-firing safety brief.
- c. **Health and Hygiene.** It is important that high standards of health and hygiene are observed when conducting activities on the range. To mitigate the risk of inhalation of airborne contaminants, ingestion and or absorption through the

skin of any contaminate on the range, the following procedures are to be adopted:

- (1) **Toilets.** On-range toilets for use by maker personnel are located within the gallery target shed. On-range toilets for range staff, firers and spectators are provided at the northern side of the range. See Annex C to this Chapter for toilet locations.
- (2) **Hand Washing.** Hand washing facilities are provided within each toilet block on the northern side of the range.
- (3) **Food and Drink.** Due to exposure to lead particles and consequent contamination of skin and other surfaces, eating, drinking, smoking and chewing of gum is prohibited on each mound during live firing activities. Eating, drinking and smoking may only occur in the vicinity after handwashing.

35. **Emergency Procedures.** In the event of medical, fire or intrusion emergencies occurring on the range, the following procedures are to be adopted:

- a. **Medical Emergency.** In the event of a medical emergency occurring from either an accident or illness, the following action is to be adopted:
  - (1) Live firing is to be immediately suspended by the CRO by giving a blast on the range whistle and then shouting the command “**CEASE FIRE, OPEN BOLTS, CLEAR RIFLES and INSERT EMPTY CHAMBER INDICATORS**”.
    - (a) All rifles that were in use at the time are to maintain muzzles pointing down range towards the target area, have the bolts removed, empty chamber indicators inserted and then laid on the firing mound.
    - (b) During the above action, firers are not to handle any rifles until the instruction to do so is given by the CRO.
  - (2) Assess the casualty and administer first aid.
  - (3) If the casualty is required to be evacuated to the nearest medical facility, contact the medical emergency services by:
    - (a) **On-Range Mobile.** Dial 111 and request an ambulance.
      - i. Advise of the nature of the medical emergency,
      - ii. Provide directions to the location of the range, and
      - iii. Advise that a person will be waiting to guide the ambulance on to the range. **Note:** The CRO is to task a club member to wait

by the roadside of Messines Avenue and the range entrance road by the NRANZ HQ building to direct the ambulance.

- (b) **Safety Net Radio.** Contact the Camp Duty Complex over the Safety Net radio, detailing the situation and what emergency services have been called. **Note:** It may be quicker to establish communications with the appropriate emergency services via a mobile phone rather than the Safety Net. However, a mobile phone may not be available or coverage may be hampered, hence the backup system of the Safety Net.
- b. **Fire Emergency.** In the event of a fire emergency, the CRO, DRO or RO (whoever is controlling the range at the time) is to order live firing to be stopped and rifles cleared as detailed in paragraphs 35.a. (1) (a-b) above. If the CRO is to order the evacuation of the range, follow the detail in paragraph 35.c. "Evacuation".
- (1) The CRO is to contact "**Fire**" Emergency Services and carry out the procedures as detailed in paragraph 35.a. above. The CRO is then to contact the TRSC Duty Complex immediately afterwards and advise of the fire and that emergency services are responding.
- c. **Evacuation.** In the event of an emergency that requires all range personnel to evacuate the range, live firing is to be stopped and all rifles cleared as detailed in paragraph 35.a. (1) (a-b) above. The CRO to initiate the evacuation by shouting "**EVACUATE THE RANGE**" and command all range and marker personnel to exit the range and meet at the muster area of the village carpark (see Annex C to Chapter 2 for the Muster Area).
- d. **Muster Point.** As detailed in Annex C to Chapter 2, the muster point is to be used in the event of an emergency that requires evacuation of the range.
- (1) The CRO is responsible to account for all range and marker personnel, including spectators that were on the range at the time of the evacuation.
- (a) If a person or persons are not accounted for and only if it is safe to do so, the CRO, with another person, are to go back to the range and conduct a search to locate the unaccounted person(s).
- e. **Intrusions.** With the range in use for live firing, it is the responsibility of all personnel on the range that if persons, animals, vehicles or aircraft are seen to enter or about to enter the range or its danger area that requires live firing to be suspended, they are to shout "**STOP**". The CRO is then to command all firers to "**CEASE FIRE, OPEN BOLTS, CLEAR RIFLES and INSERT EMPTY CHAMBER INDICATORS**". Only when the intrusion has been cleared may live firing resume under command of the CRO.
- (1) **Reporting Intrusions.** Once live firing has been suspended and all rifles cleared, immediately report the intrusion to the Camp Duty Complex

over the Safety Net Radio with as much detail of the intrusion as possible. For vehicles describe the colour, make and registration number if visible. For aircraft describe colour and fuselage numbers, whether helicopter or fixed wing, if fixed wing describe the wing position.

- g. **Rifle / Ammunition Accidents.** In the event of a rifle or ammunition accident, administer first aid and follow the actions detailed in paragraph 35. (1-3), (a-b) "Emergency Procedures".
- (1) If a rifle is involved, the rifle is to be unloaded by a range official and declared safe through visual inspection. If the rifle cannot be unloaded, it is to be set aside with the muzzle pointing down range towards the stop butt/target area). A range official is to guard the rifle to prevent it from being touched by anyone in the range.
  - (2) If ammunition is involved obtain as much information as possible, including fragments if available. Taking images is another method to record details.
  - (3) The CRO is to obtain witness statements from those involved as soon as possible for reporting to the New Zealand Police and NZDF.

36. **Hearing Protection.** Noise generated from the discharge of modern rifles can reach over 140 decibels sound peak pressure. Unprotected ears or inappropriate hearing protection can cause considerable damage to eardrums. The CRO is responsible for ensuring all range staff, firers, spectators, butt's officers and markers, when engaging or observing live firing events on Seddon Range are wearing the appropriate hearing protection.

- a. **Hearing Protection Class.** In accordance with Reference C, class 5 earmuffs and/or earplugs are to be worn by all persons within 20m of the firing mound when live firing is in progress.
- b. **Safety Distance When Not Wearing Hearing Protection.** Hearing protection is not required to be worn if persons are beyond 20m of any firing mound that is in use at the time.

37. **Limitations on Live Firing.** Live firing is not to be conducted on any Trentham Military Camp Range on Christmas Day and Good Friday of each year due to the significance of these days. An exemption to conduct live firing may be granted only under special circumstances. A written application is required to be forwarded to Range Control HQ TRSC for consideration of such an exemption.

38. **Range Officer Qualifications.** All NRANZ Range Officers (RO), including CRO and DRO, are members who are authorised and appointed by the NRANZ Council. The selection criteria includes the candidates firing experience, job background and previous experience in the position for which the appointment is sought.

39. **Chief Range Officers (CRO) Responsibilities.** A CRO, who must be at the time of the appointment to a range officer, is to be appointed for every NRANZ and WRA live

firing event. The CRO is to be present on the firing mound during live firing. The CRO is to be identifiable through the wearing of a bright (fluro) vest and/or cap. The vest and/or cap are to be worn at all times while live firing is being conducted. The CRO is responsible for the overall conduct and safety on the range during live firing in accordance with Range Standing Orders (RSO), which includes the safety requirements imposed by NZDF and NRANZ. Additionally the CRO:

- a. Is responsible for the general discipline and behaviour of all competitors and range staff on the range.
- b. Has the authority to prevent any competitor from participating in any live firing activity that he or she considers incapable of firing for any reason.
- e. **Prior to Live Firing.** The CRO is responsible for the following prior to live firing occurring:
  - (1) Inspection of the stop butt projectile impact areas to ensure that tunnelling and any hard objects (stones) greater than 30mm in size are not present.
    - (a) If tunnelling is present or hard objects larger than 30mm in size are discovered, the affected areas are to be refurbished by filling the tunnelling and/or removing the hard objects prior to live firing occurring.
  - (2) Ensuring that all 'Range Boundary Flags' are raised to the top of each mast head at the respective locations (see Annex C to Chapter 2 for locations).
  - (3) Confirming that the down-range area and the range danger area are clear of persons, animals or vehicles.
  - (4) Establishing on-range communications with the Chief Butts Officer (CBO) in the marker gallery (if manned for the use of manual targets).
  - (5) Confirming that all marker personnel are under cover of the gallery prior to ordering the lowering of the markers gallery (butts) flag before ordering the commencement of firing. See paragraph 42. "Markers Gallery (Butts) Screen/Flag" to this Chapter for details.
- f. **During Live Firing.** The CRO is responsible for the following during live firing:
  - (1) Controlling the operation of the markers gallery or butts flag.
    - (a) The raised markers gallery flag means that live firing is not permitted. Rifles that are presented on the firing mound are not to be sighted, aimed, handled or fired while the markers gallery flag is raised.
  - (2) If the CRO is required to undertake another role or has to leave the range a replacement CRO is to be appointed to allow live firing to continue.

- (3) If a replacement CRO is not available, the live firing activity is to cease and not resume until a replacement CRO is appointed
- (4) Due to safety requirements a CRO may not fire on the range while holding the appointment of CRO.

40. **Range Staff.** To ensure minimum acceptable supervision of firers and overall range control, Deputy Range Officers (DRO's) are to be appointed as follows:

- a. **On a Firing Mound.** In addition to the CRO, DRO's are to be appointed for each group of 10 targets (i.e. the use of 16 targets requires two DRO's). The DRO's are required to be present on the firing mound during live firing. Should a DRO be required to undertake any another activity (i.e. participates in an event as a firer or is required to leave the range), a suitable replacement must resume the DRO responsibilities.
- b. **In the Markers Gallery.** To ensure minimum acceptable supervision of markers and overall control within the galley, Deputy Butts Officers (DBO's) are to be appointed for each group of 10 targets (i.e. the use of 16 targets requires two DBO's).

41. **Range Boundary Flags.** Red or orange fluorescent coloured Range Boundary Flags, at a dimension of 1.8m x 1.8m square, are to be used to visually advise persons about the range and area that the range is about to be used or is in use for live firing. Range Boundary Flags are to be raised at least 30 minutes before firing commences and are to remain raised throughout the duration of the live firing activity.

- a. **Locations.** Range Boundary Flags are to be located at the following points:
  - (1) On the white flag pole located on the grassed area to the northwest of the NРАНZ Headquarters building.
  - (2) On the pole located on the northern side (golf course side) between the 500yd and 600yd mounds, which has a red painted band around it.
  - (3) On the pole located on the southern side (corrections side) by the 100yd mound, which has a red painted band around it.

42. **Markers Gallery (Butts) Screen/Flag.** For use when the gallery is manned to operate manual targets only. A red coloured screen attached to a wooden frame inserted into a target frame within the gallery is raised up and down in the same manner as a flag. This system is used to indicate to those on a firing mound that:

- a. When the red gallery screen/flag is raised, the range is closed for firing. Live firing is prohibited.
- b. When the red gallery screen/flag is lowered, the range is open for live firing. Live firing may proceed under the control of the CRO.

- c. The red gallery screen/flag is to be raised and kept raised until all markers are within the protection of the gallery.
- d. Once confirmed with the Chief Butts Officer (CBO) that all markers are under the protection of the gallery, the gallery screen/flag can then be lowered only by command of the CRO.
- e. No one is to leave the gallery until the cessation of firing has been given by the CRO.
- f. When firing has ceased, the CRO may give the command to raise the gallery screen/flag.
- g. Only in an emergency is the gallery screen/flag to be raised without permission from the CRO.

43. **Mounds / Butts Communication Failure.** Should radio communications between the firing mound and butts (i.e. between the CRO and the CBO) fail, the CRO is to:

- a. Cease live firing and carry out rifle clearance as detail on paragraph 35.a. (1) (a-b) "Emergency Procedures".
- b. Contact the CBO in the gallery either via cellphone or by physical means to determine the cause of the communication failure.
- c. Only when communications have been re-established with the CBO may live firing continue under the control of the CRO.

44. **Danger Area Control.** The range danger area for some NRANZ live firing events extends over part of the Trentham Golf Club and two non-NZDF properties. Control measures for the range danger area over each of these properties are as follows:

- a. **Trentham Golf Club Consent.** During firing from 800yd, 900yd and 1,000yd, the use of targets nearest to the Trentham Golf Club results in the range danger area extending over the southern part of the golf course. For NRANZ live firing events that impose a danger area over part of the golf course, prior written consent is to be obtained from the Trentham Golf Club. The dispensation is to clearly acknowledge that the affected part of the golf course will be closed for the period of live firing.
- b. Restricting live firing to the following targets results in a no range danger area extending over the southern part of the Trentham Golf Course, therefore, written consent is not required:
  - (1) From 300yd to 600yd targets numbered 05 to 50 may be used.
  - (2) From 800yd targets numbered 21 to 50 may be used.
  - (3) From 900yd targets numbered 24 to 50 may be used.
  - (4) From 1,000yd targets numbered 26 to 50 may be used.

- c. **Non-NZDF Property Consent.** The range danger area extends over the Upper Hutt City Council Southern Hills Ridgeline Reserve and one private property. The NRANZ is to negotiate procedures and a written agreement with the relevant property owner for the use of their property during NRANZ, WRA and its affiliated club's live firing activities conducted on Seddon Range.
- (1) Written dispensation for the land to be incorporated into the range danger area.
  - (2) Agreement that NRANZ will ensure that no person(s) is/are occupying the land when Seddon Range is in use for live firing events, and
  - (3) Responsible to erect and maintain signs on the property boundary to warn the public of the associated danger.
45. **Limitations When Using the Range.** Due to the locations of both Seddon Range and the Demolition Range to each other and to provide the appropriate safety for range personnel, the Demolition Range is not to be used when Seddon Range is in use and Seddon Range is not to be used when the Demolition Range is in use.
- a. **NZDF Emergency Demolitions.** The only exemption to the above is when Emergency Demolitions are required to be conducted by NZDF. In this case, details as described in paragraph 27.b. "NZDF Emergency Demolitions Access)" are to be followed.
46. **Authorised Live Firing Activities.** In accordance with these RSO and NRANZ Council rules, procedures and conditions, only 300yd -1,000yd fullbore rifle deliberate bulls-eye target live firing activities are authorised to be conducted on Seddon Range during NRANZ and WRA events.
- a. Any type of live firing activity that is not described in these RSO or in the NRANZ Council rules, procedures and conditions, is not authorised to be conducted on Seddon Range.
  - b. **Night and Low Light Firing.** Night and low light firing on Seddon Range is not authorised.
  - c. **Pistols.** The carriage and use of pistols on Seddon Range is not authorised.
47. **Authorised Firing Distances.** Live firing may only occur from 300yd, 300m, 500yd, 600yd, 800yd, 900yd and 1,000yd firing mounds. Except as authorised for cross-lane firing (refer to paragraph 59. "Cross-Lane Firing (Wind Flag Line)"), each firing position is to be located on the mound so that the firer is parallel to the range axis, i.e. straight down range at an angle of 90° (1600 mils) to the target line.
48. **Authorised Rifles.** The requirement of NRANZ rules that all rifles presented for firing on Seddon Range are in a safe and serviceable condition is to be complied with. This requirement is the responsibility of the user/competitor. The following rifles types are authorised by the NRANZ Council Firing Rules and Regulations and these RSO for use on Seddon Range during NRANZ, WRA and its affiliated clubs live firing events:

- a. **Target Rifle.** Target rifles are defined as a precision single shot bolt action rifle that is manually loaded and fitted with vernier calibrated aperture sights, which requires the use of a sling during firing. This rifle class may fire 7.62x51mm or 5.56x45mm NATO ammunition that does not exceed the muzzle energy limitations detailed in paragraph 53. "Authorised Ammunition" to this Chapter.
- b. **F/Class Target Rifle.** F/Class target rifles are defined as precision single shot bolt action rifles which are manually loaded that may be fitted with vernier calibrated aperture or optical sights and may use any artificial support during firing. This rifle class may fire ammunition up to 8mm in calibre that does not exceed the muzzle energy limitations as detailed in paragraph 53. "Authorised Ammunition" to this Chapter.
- c. **.303in Target Rifle.** .303in target rifles are defined as bolt action service rifles that have been regulated by a competent armourers to increase the rifle's accuracy potential to meet the current NRANZ Cone of Fire. These rifles may only be operated in a single shot application and require the use of a sling during firing. .303in calibre ammunition is the only calibre authorised for this class. .303in target rifles presented for use on Seddon Range are not only subject to the above but also the following conditions:
  - (1) **Certification of Regulation.** A certificate is to be produce by the NRANZ armourer who is satisfied that the regulation performed on the rifle has the potential to enhance its accuracy. The certificate is to be retained by the firer/owner, which is to be presented on demand if called upon by the CRO or a DRO while on the range.
  - (2) **Sight Systems.** .303in target rifles are to have vernier calibrated aperture target sights. The original service "Battle Sights" are not authorised for use on Seddon Range.
  - (3) **Rapid Firing.** The use of .303in target rifles in a rapid fire application is prohibited.
- d. **Use of Magazines.** Some of the above rifles may require the use of a magazine. Magazines may only be used as a loading platform. Ammunition is not to be fitted into the magazine for multiple round firing capabilities.

49. **Rifle Safety Precautions.** All persons involved in live firing events while on the range must adhere to the following safety precautions when handling rifles and ammunition:

- a. Every rifle is to be treated as if it is loaded.
- b. Any rifle left unattended is to be in a safe condition (unloaded with the bolt removed and an empty chamber indicator inserted).
- c. The bolt is only to be inserted into the rifle or the empty chamber indicator removed, when the firer is on the firing mound.

- d. The bolt of the rifle is only allowed to be closed when the butt of the rifle is in the firer's shoulder and is being aimed at the respective target.
- e. **Leaving the Mound.** Before a firer may leave a firing mound, the rifle is to remain pointing down range towards the target, the bolt is then to be removed from the rifle:
  - (1) The competitor is to check that the rifle is clear of ammunition.
  - (2) The Register Keeper, Coach, Team Captain or a person nominated by the Team Captain must confirm that the rifle is clear of ammunition by looking through the barrel bore from the breech end.
  - (3) An empty chamber indicator is then to be inserted prior to the rifle leaving the firing mound.
- f. The CRO and/or the DRO instructions must be explicitly followed.
- g. **Misfire / Hangfire.** If a misfire occurs, it could result in a hangfire. In this case, the rifle's aim is to be maintained on the target for a further 30 seconds before the round is permitted to be ejected. Prior to opening the bolt to eject the round, the rifle is to be rotated so that the loading/ejection port is facing the firing mound.

50. **Elevation Sight Setting Checking Procedure.** The following elevation sight setting checking procedure is to occur during all NRANZ and WRA live firing events.

- a. Each firer is to record their normal elevation sight setting for 300yd, 300m, 500yd, 600yd, 800yd, 900yd and 1000yd. The record is to be in writing and easily referred to by the person checking the sight setting.
- b. Before taking up a position on the firing mound, the firer is to present his/her rifle to the scorer or check scorer for verification of the elevation setting.
- c. The scorer or check scorer is to read the elevation sight setting then refer to the written record.
- d. If the elevation sight setting is correct the firer is permitted to fire.
- e. If the sight setting differs by more than 2 minutes of angle (MoA) from the written record, the firer must either change the sight setting to suit or explain to the satisfaction of the scorer or check scorer why it is different and amend the written record for future ranges.
- f. The firer is to confirm that the sight fitted is the correct one for that particular rifle.

51. **Zeroing of Rifles.** Where possible, rifles used during NRANZ events are to have been live fire zeroed at another range. As this is not practicable in all situations, it is permissible to fire bore-sighted rifles from the 300yd mound only on Seddon Range so long

as the fall of shot is observed from the firing position and markers within the gallery are warned to assist with the fall of shot location.

- (1) If after three shots the fall of shot is not within the appropriate cone of fire (refer to Annex B to Chapter 2 for cone of fire details), the bore-sighted rifle is to be removed from the firing mound and zeroed at another range before being used on Seddon Range. To improve bore-sighting effectiveness, it is suggested that collimators or lasers are used.

52. **Use of Suppressors.** As suppressors are a mechanical device, they require maintenance to be kept in a safe condition for use. All suppressors presented in the range are to be inspected by the CRO prior to use. If the CRO is satisfied that a suppressor shows any of the following faults, it is not to be used on Seddon Range:

- a. Misalignment with the barrel axis,
- b. Dented,
- c. Cracked,
- d. Bulged,
- e. Obstructed bore,
- f. Loose baffle(s) or end caps,
- g. Perforated,
- h. Corroded,
- i. Incorrect calibre.

53. **Authorised Ammunition.** Ammunition from .22in rimfire up to 8mm calibre that complies with the following projectile types and performance limitations are authorised for use during NРАНZ live firing events conducted on Seddon Range.

- a. **Projectiles.** Only ball, hollow-point match or polymer tip insert projectiles are authorised.
- b. **Performance.** Ammunition that exceeds any one of the following performances are not authorised for use on Seddon Range:
  - (1) A maximum muzzle velocity (MV) of 1,000 m/s (3,280 f/s)
  - (2) A maximum muzzle energy (ME) of 4500 J (3,319 ft/lbs).
- c. **Hand-loaded Ammunition.** Hand-loaded ammunition is to be checked in accordance with paragraph 54. "Ammunition Checking Procedure" to this Chapter, to confirm its performance does not exceed either MV or ME limitations.

54. **Ammunition Checking Procedure.** The CRO or another range official who has been delegated by the CRO is authorised to check the ammunition used by firers to confirm it does not exceed the authorised ammunition performance specifications as detailed in paragraph 53. “Authorised Ammunition” to this Chapter:

- a. NRANZ or the WRA are to provide at least one ammunition checking officer and the equipment necessary to complete detailed checks of ammunition.
- b. At any time any firer’s ammunition may be visually checked by NRANZ ammunition checking officer to ensure that only approved projectiles are being used. In normal circumstances, projectile checking is to occur randomly (with no greater frequency than one firer in each squad at each range) prior to the firer taking his or her position on the firing mound.
- c. Every firer is to have a written description of the load they are using. This is to include the case manufacturer and range of case weights, type of powder and weight of charge, type of primer, type and weight of projectile, overall cartridge weight range. This information is to be provided on request.
- d. On request of a NRANZ ammunition checking officer, firers are to provide two sample rounds for checking against the written loading information of the firer concerned. In normal circumstances these checks are to occur randomly (with no greater frequency than one firer from every fifth squad at each range) after the firer has finished firing. This check shall also occur whenever there is a suspicion that the rifle or ammunition is not performing within the CoF or “hot” loads are being used (difficult extractions may be an indicator that “hot” loads are being used).
- e. If at any time a NRANZ ammunition checking officer has any concern that the ammunition is not performing within the CoF, or that the ammunition is unsafe, that ammunition is not to be fired. Alternative ammunition will need to be obtained and checked before the firer is permitted to continue firing.

55. **Unauthorised Ammunition.** Due to fire, excessive penetration, ricochet, backsplash and/or brass/case rupture hazards, the following ammunition is prohibited for use on Seddon Range:

- a. Ammunition with projectiles that are not as described in paragraph 53.a “Authorised Ammunition”,
- b. Ammunition that exceeds either the MV or ME performance limitations in paragraph 53.b “Authorised Ammunition”,
- c. Tracer,
- d. Armour piercing or penetrating,
- e. Incendiary,

- f. Lead-free, solids, monolithic or mono-metallic construction,
- g. Sabot/discarding jacket,
- h. Corroded, or
- i. Military Surplus.

56. **Authorised Targets.** NRANZ bulls-eye targets, either manually operated or electronic target system (ETS), are the only targets authorised for use on Seddon Range during NRANZ and WRA live firing activities. **Note:** For details on range operation for the two target types, refer to paragraph 70. “Range Open Indication for Firing” and paragraph 79. “Range Closed Indication for No Firing”. The following target construction, target support legs, target line, extreme left and right target positioning, target centre and target spacing limitations are to be applied:

- a. **Construction.** Targets are to be constructed so the frame is made from the smallest size wood practical and projectiles are able to easily penetrate the target face backing. The target area within the frame should be of the smallest practical size, consistent with competition scoring requirements, to reduce the effects of wind on the structure. No stainless steel fixtures are to be used on any part of the frame or target as these may increase the risk of injury to markers within the gallery.
- b. **Target Line.** Targets may only be displayed using the Loughnan cantilever design target frames located in the markers gallery.
- c. **Extreme Left and Right Target Positioning.** Targets are not to be positioned for engagement any further left (north) of target lane 05 and any further right (south) of target lane 50.
- d. **Target Heights.** To ensure ricochet inducing surfaces are predictable and where possible kept at a minimum, the cantilever target mechanism automatic back-catches are to be operational and correctly used by markers during all NRANZ and WRA live firing activities. Targets are to be displayed so that the target centres are at:
  - (1) 1.27m above the top of the mantlet during firing.
- e. **Spacing.** The minimum spacing between targets is to be not less than 3.6m measured from the target centre to the centre of the adjacent target(s).
- f. **Moving Targets.** The engagement of moving targets on Seddon Range is prohibited.

57. **Target Support Leg Strength Checking.** Damage can be caused to target support legs due to projectile strike. This damage can cause structural weakness to the leg dependent on the number and location of strikes. The risk of leg breakage is increased on the occasion of high winds whilst the targets are raised. In order to mitigate these risks the following actions are to occur:

- a. The CBO will check each target support leg in use for damage on the following occasions:
  - (1) Prior to the commencement of firing on each day; and
  - (2) At the end of the day's activities.
- b. Once the CBO identifies a risk of breakage they are to notify the CRO and replace the target support leg immediately.
- c. The CBO will advise the CRO of any legs considered to be at risk of breakage due to high wind effect on the targets as this occurs.
- d. The CBO will order a cease fire if satisfied that there is an imminent risk of target leg breakage. The CRO will be notified of the reason and of remedial action to be undertaken.
- e. **Checking Criteria.** Target support legs are to be checked for excessive damage. In relation to projectile strike, legs that have received 10 or more projectile strikes within any 200mm length are to be identified and removed from use.
- f. NRANZ will keep a record of occasions when legs are removed from service due to damage.

58. **Marker Personnel Safety.** The use of manual targets requires marker personnel to operate each target that is being engaged. To provide the required safety for marker personnel in the gallery during live firing on Seddon Range, the following is to be adhered to:

- a. All markers are to follow the instructions given by the Chief Butts Officer (CBO) or if more than 10 targets are in use at any one time, markers within a group of 10 targets are to follow the instruction of the Deputy Butts Officer (DBO).
- b. All personnel in the Butts are to remain on the gallery side of the trench at all times during live firing and when the gallery screen/flag is lowered.
- c. Under no circumstances are markers to use port-a-loos provided while live firing is in progress. Provisions for markers to use these toilets will be made during planned cease fires throughout the day's activity. Toilets in the target shed can be accessed during live firing.
- d. While operating within the gallery, all markers are to wear:
  - (1) Fully enclosed sturdy footwear at all times.
  - (2) Safety glasses or prescription glasses at all times.
  - (3) Markers and staff within the gallery will wear a minimum of class 5 hearing protection when firing is in progress.

- e. While operating targets, all markers are to be constantly aware of:
- (1) Maintaining their feet away from the bottom target frame apron when lowering a target.
  - (2) Ensure the target frame back latches (holding a target in the raised position) are being used and are operating at all times.

59. **Cross-lane Firing (Wind Flag Line).** Cross-lane firing is permitted on Seddon Range under the following conditions:

- a. **500yd and 600yd Firing Mounds.** At the 500yd and 600yd firing mounds, firers allocated lanes next to a wind flag line may be permitted to fire cross-lane up to a maximum of one target. This results in the person firing from the normal firing position number 19 engaging target number 20 and the person firing from target number 20 engaging target number 19. The following table shows the permitted cross-lane situations occurring during NRANZ and WRA live firing activities.

Target Number	20	19	22	21	30	29	32	31
Normal Firing Position	19	20	21	22	29	30	31	32

- b. **800yd, 900yd and 1,000yd Firing Mounds.** At the 800yd, 900yd and 1,000yd firing mounds, firers allocated firing lanes next to a wind flag line may be permitted to fire cross-lane up to a maximum of two targets. This results in the person firing from the normal firing position number 18 engaging target number 20 and the person firing from target number 20 engaging target number 18. The following table shows the permitted cross-lane situations occurring during NRANZ live firing activities.

Target Number	20	18	23	21	30	28	33	31
Normal Firing Position	18	20	21	23	28	30	31	33

60. **Cone of Fire.** A cone of fire is the distribution of fired projectiles within a margin of error in the vertical and horizontal planes. The cone of fire consists of the core distribution, unintentional aiming error, variable weather conditions, wind estimation error and wrong target error. The authorised NRANZ cones of fire dimensions for the various firing distances on Seddon Range are listed at Annex B to Chapter 2.

61. **Inability to Achieve the Cone of Fire.** If for any reason any firer personally notifies the CRO or a DRO, or is identified as having fired a shot outside the cone of fire, the following procedure is to occur:

- a. The firer is to immediately stop firing or be stopped from firing until an observer is present behind the firer.
- b. The firer's next shot is to be observed and if it falls within the cone of fire the firer is to be permitted to continue firing.

- c. If the next shot does not fall within the cone of fire, the firer is to be provided a competent coach with the intention of bringing the spread of shot to within the cone of fire in the next three shots.
- d. Firers who are unable to achieve the cone of fire within the next three shots are to be prevented from further firing. Firers prevented from firing in this way may resume firing following identification and rectification of a rifle or ammunition fault. If the rifle and ammunition are found to be satisfactory, the firer is not to recommence firing until after suitable non-live firing training with the rifle has occurred.
- e. The event is to be recorded in a logbook along with the location of the shot or shots outside the cone of fire if possible.

62. **Extreme Wind Limits.** Extreme wind on Seddon Range is a natural seasonal phenomenon. Down range frontal and rear winds pose a risk of target support leg breakage and this may, in turn, lead to a risk of injury to personnel within the markers gallery (Butts). Excessive cross-range winds may become difficult for firers to judge and could result in errors in sight setting allowance permitting fired projectiles to drift beyond the established, authorised and safe cone of fire. Wind speed (such as gusting) and direction may also change with little notice and this situation adds a dynamic to managing safety on the range. In order to support considered responsible decision making by the CRO, all NRANZ live firing activities are to cease in the following instances:

- a. **Immediate Cease Fire.** If wind from any direction and duration exceeds 60 km/h the CRO is to order a cease-fire. The CRO is then to assess the wind direction, speed and other factors (in consultation with safety staff and utilising weather monitoring equipment) to determine if the wind speed is a safety issue. Firing is not to recommence until the CRO is satisfied that it is safe to do so.
- b. **Down-Range Wind.** Should the CRO and/or the CBO have concerns with imminent target breakage due to excessive wind, the CRO or CBO is to immediately order a cease-fire and a postponement until excessive winds abate. Firing is not to recommence until the CRO is satisfied that it is safe to do so.
- c. **Cross-Range Wind.** Excessive cross-range wind strength is to be determined on the basis of the required rifle sight setting to obtain hits on an allocated target.
  - (1) If more than 20 minutes of angle needs to be applied to rifle sight settings then the CRO is to order a cease-fire.
  - (2) Once firing is halted, the CRO is to provide a time at which they will review recommencement of live firing. At this time the CRO will decide whether to schedule a further review, cancel firing or recommence firing.

63. **Instruction for Beginner Firers.** Beginner firers are to be supervised and coached by an experienced NRANZ member. Beginner firers may only engage targets from the

300yd firing mound. Once the beginner is capable of constantly achieving the 300yd cone of fire, the beginner firer may continue firing unsupervised

- a. If for any reason the beginner firer personally identifies or is identified as having fired a shot outside the relevant cone of fire, the procedure in paragraph 61. "Inability to Achieve the Cone of Fire" is to be adopted.

64. **Waiting Firers, Spectators, Children and Dogs.** The CRO or appointed DRO is responsible for ensuring that all firers waiting to participate in a live firing activity and all spectators, including children observing an activity that are within 20m of the firing mound that in use at the time, are to wear the appropriate hearing protection as detailed in paragraph 36. "Hearing Protection" of this order.

- a. **Waiting Firers, Spectators Not Wearing Hearing Protection.** Waiting firers and spectators that are not wearing the appropriate hearing protection are not permitted to move closer than 20m from the firing mound that is in use at the time.
- b. **Waiting Firers/Spectators.** Waiting firers and spectators, who are wearing the appropriate hearing protection, may move forward to not less than 2m behind a firer on the mound.
- b. **Children.** All children present on the range during live firing activities are to be supervised by their parent(s) or guardian(s) at all times.
- c. **Dogs.** Dogs that are present on the range during live firing activities are to be kept under strict control of their owner(s) or the person responsible. Dogs are to be leashed or not left to roam freely and be kept away from the firing line that is in use at the time.

## CHAPTER 4 – BEFORE FIRING

65. **Before Live Firing.** Prior to any live firing activity commencing on Seddon Range, the CRO is responsible to ensure the following actions have been conducted.

66. **Range Boundary Flags.** Live firing is not to commence until all Range Boundary Flags have been hoisted to the top of each pole. See Annex C to Chapter 2 for locations and paragraph 41. "Range Boundary Flags" to Chapter 3 for details. This is to be the first action undertaken when opening the range as it provides notice to all personnel about that the range is about to be used for live firing.

67. **Range Danger Area Clearance.** Conduct a visual check of the range danger area to confirm that no personnel, vehicles or animals are within it.

- a. If personnel or vehicles are seen to be within the range danger area, immediate contact is to be made with the Camp Duty Complex over the Safety Net Radio, advising of the intrusion.
- b. Live firing is not to commence until the Camp Security staff have:

- (1) Removed the intrusion from the range danger area; and
- (2) Notified the CRO that the intrusion has been removed and it is clear to live fire.

68. **Inspection of Bullet Catcher Impact Areas.** An Inspection of the bullet catcher impact areas within the stop butt is to be conducted prior to the conduct of live firing. This inspection is to ensure that no ricochet or backsplash hazards exist. If any work is required to be performed on the bullet catcher, personal protection equipment is to be worn. See paragraph 83. "Personal Protection Equipment" for details.

- a. **Hard Materials.** If any hard materials, stones over 30mm in size or an excessive amount of fired projectiles are discovered on the bullet catcher surface, the hard material will require total removal prior to live firing.
- b. **Uneven Surface.** If the bullet catcher face is found to have rabbit burrows, water rutted exposing fired projectiles or is excessively uneven in its surface, then the burrows, rutting and the uneven surface will require filling in and flattening prior to live firing.
- c. **Bullet Impact Area Face Angle.** In accordance with Reference B, 34° (600 mils) is the recommended angle for the front face or projectile impact face of the bullet catcher to reduce ricochet. From projectile impact and natural settlement, this angle will reduce, which must never fall below 30° (530 mils) as this may cause ricochet to leave the range danger area.

69. **Safety Brief.** Once all participants have congregated on the range, the CRO is to conduct a safety brief detailing:

- a. The course of events for day's activities;
- b. Detail firing lanes that are to be used;
- c. Location of the on-range medical kit and First Aider.
- d. Emergency procedures as detailed in paragraph 35. "Emergency Procedures".
- e. Intrusion procedures as detailed in paragraph 35.e. "Emergency Procedures - "Intrusions".
- f. All range personnel to be observant for intruders entering the range or its danger area,
- g. All range personnel are to obey the commands of the CRO and/or the DRO,
- h. Rifles are only to be handled and loaded on command of the CRO or a DRO; and
- i. Detailing the responsibility for the supervision of waiting firers, spectators, children and dogs.

- j. All marker personnel are to obey the commands of the CBO and/or the DBO.
- k. The CRO is to confirm with the CBO that all markers are under the protection of the gallery prior to ordering the lowering of the gallery screen/flag.

70. **“Range Open” Indication for Firing.** Due to the operation of both manual and ETS targets, the below system is to be used to indicate to all firers and scorers on the range that the range is “open” for live firing.

- a. **Range Open When Using Manual Targets.** When the markers gallery is manned to operate manual targets and the CRO has confirmed with the CBO that all markers are under cover of the gallery, the gallery screen/flag may be lowered, indicating the range is “open” for live firing. The gallery screen/flag is to stay lowered until commanded by the CRO to do otherwise. See paragraph 35. “Markers Gallery (Butts) Screen/Flag” for details.
- b. **Range Open When Using Electronic Target Systems (ETS).** As the gallery will not be manned during the use of ETS, to provide the appropriate indication to firers and scorers that the range is open for live firing, the CRO is to remove the large red coloured road cone from the firing mound that is to be used and shout the command “RANGE IS OPEN”.

71. **Targets.** Ensure that all target frame locking mechanisms are operational, the correct targets are to be used and are positioned in the correct firing lanes. See paragraph 56. “Authorised Targets”.

72. **Cross-Lane Firing (Wind Flag Line).** Advise firers that are affected by a wind flag line that requires cross-lane firing and allocate which targets are to be engaged. See paragraph 59. “Cross-Lane Firing (Wind Flag Line)” for details.

73. **Safety Net Communications - Commencement of Firing.** Advise the Camp Duty Complex when live firing is about to commence over the safety net radio.

## CHAPTER 5 – DURING FIRING

74. **Rifle Handling.** Every rifle is to be treated as if it is loaded. The CRO and DRO are to be constantly vigilant of firers handling rifles, ensuring that:

- a. Any rifle left unattended is to be unloaded with the bolt removed with an empty chamber indicator inserted.
- b. The bolt is only to be inserted into a rifle when presented on the firing mound.
- c. The bolt of the rifle is only allowed to be closed with a round in the chamber when the butt of the rifle is in the firer’s shoulder and being aimed at the allocated target for that firer.
- d. Before a firer may leave a firing mound, the scorer must ensure that the bolt has been removed from the rifle and the chamber is clear of ammunition by looking through the barrel bore from the chamber end.

75. **Misfires.** If a misfire occurs, the firer is to maintain the aim of the rifle at the respective target and wait 30 seconds. Once 30 seconds has lapsed, the rifle is then to be rotated so the ejection port faces downwards towards the mound when the bolt is opened and worked to the rear ejecting the misfired round.

76. **Accidents, Incidents and Intrusions.** The CRO, DRO and all participants on the range are to be vigilant of accidents, incidents and intrusion. If an accident, incident or an intrusion is seen to occur or is about to occur, all present on the range are responsible to stop live firing by shouting the command “**CEASE FIRE**”. The CRO is to take the appropriate action as detailed in paragraph 35. “Emergency Procedures”.

77. **Inability to Achieve the Cone of Fire.** If any firer is observed firing outside the relevant cone of fire, the procedures detailed at paragraph 61. “Inability to Achieve the Cone of Fire” is to be followed.

78. **Rifle Clearance.** When a particular live firing event has ceased or firers are moving to another firing mound or are leaving the range, DRO(s) or scorer(s) is/are to visually check each rifle to ensure the bolt has been removed and the rifle does not contain any ammunition.

## CHAPTER 6 – AFTER FIRING

79. **“Range Closed” Indication for No Firing.** Due to the operation of both manual and electronic targets, the below system is to be used to indicate to firers on the mound that the range is “closed” for live firing.

- a. **Range Closed When Using Manual Targets.** When the markers gallery is manned to operate manual targets, the CRO is to order the gallery screen/flag is to be raised, indicating the range is “closed” for live firing. The gallery screen/flag is to stay raised until lowered by order from the CRO. See paragraph 42. “Markers Gallery (Butt’s) Screen/Flag” for details.
- b. **Range Closed When Using Electronic Targets Systems (ETS).** As the markers gallery will not be manned during the use of ETS, to provide the appropriate indication to firers and scorers that the range is closed for firing, the CRO is to:
  - (1) To confirm that all firers have finished shooting,
  - (2) Place a large red/orange coloured road cone in the middle of the firing mound that is in use, and
  - (3) To shout the command “RANGE IS CLOSED”.

80. **Rifle Clearance.** All rifles presented on the range are to be cleared as detailed in paragraph 49.- “Rifle Safety Precautions”.

81. **Safety Net Communications - Cessation of Firing.** At the completion of firing, after all rifles have been cleared, the CRO is to contact the Camp Duty Complex over the Safety Net Radio and advise that all live firing has ceased on the range.

82. **Range Refurbishment.** At the completion of live firing, the range is to be refurbished to its original condition by conducting the following:

- a. Remove all brass (fired cases),
- b. Remove all rubbish.
- c. All targets used are refurbished and placed in the gallery target shed.
- d. Remove all Range In Use Flags.
- e. Refurbish all projectile impact areas within the stop butt that were used. See paragraph 68. "Inspection of Bullet Impact Areas" for specification details.

**Note:** To minimise lead contamination when refurbishing the bullet impact areas, personal protective equipment is to be worn. See paragraph 83. "Personal Protection Equipment" for details.

83. **Personal Protection Equipment.** Personnel working, inspecting, maintaining and cleaning range structures that are likely to have accumulated lead (e.g. during bullet catcher refurbishment), the following is to be undertaken to prevent inhaling or absorbing disturbed lead contaminated dust particles.

- a. A dust mask is to be worn over the nose and mouth to reduce inhalation.
- b. Safety glass are to be worn to reduce larger particles entering eyes.
- c. Outer clothing (e.g. overalls), which can either be contained and washed afterwards or disposed of.
- d. Fully enclosed footwear.
- e. Hands and any exposed skin are to be washed immediately afterwards, especially prior to the consumptions of food and drink.

84. **Securing the Range.** Once the range has been refurbished, the CRO is responsible to secure the range gate.

85. **Returning Range Keys.** Return the range keys to the Camp Duty Complex.

- a. When returning the range keys, complete the column, as originally begun in the Key Register as detailed in paragraph 29.b. "Key Register".
- b. Erase the entry made on the Range In Use Board (white board) as detailed in paragraph 30. "Range In Use Board".
- c. Deactivate the "Seddon Range" slide of the Range Indication Board to "not in use" as detailed in paragraph 30. "Range Indication Board".

85. **Range Clearance Certificate.** Submit a Range Clearance Certificate (attached at Enclosure 1 to Chapter 2) within 48 hours to Range Control TRSC. For ease of return, the

completed certificate can be placed within the range key box when returning the keys to the Camp Duty Complex.

**Seddon Range Clearance Certificate for NRANZ and WRA use**

<b>Description of Action Carried Out During Shooting:</b>	<b>Yes</b>	<b>No</b>
	<i>(Please tick)</i>	
1. Did any intrusions occur into the range danger area or on the range itself?	<input type="radio"/>	<input type="radio"/>
a. If "yes" was the intrusion reported to the Camp Duty Complex?	<input type="radio"/>	<input type="radio"/>
2. Were winds of 60 km/h or over experienced during shooting?	<input type="radio"/>	<input type="radio"/>
a. If "yes", was shooting stopped?	<input type="radio"/>	<input type="radio"/>
(1) If shooting was stopped what time did this occur?	-----	
b. Did shooting recommence that day?	<input type="radio"/>	<input type="radio"/>
(1) If shooting recommenced, what time did this occur?	-----	
<b>Description of Action Carried Out After Shooting:</b>		
3. Was the bullet catcher impact area inspected and restored to the required standard (JSP 403, Vol 2)?	<input type="radio"/>	<input type="radio"/>
4. Is the markers gallery clean and tidy?	<input type="radio"/>	<input type="radio"/>
5. Are the firing mounds free of brass and live ammunition?	<input type="radio"/>	<input type="radio"/>
6. Has any damage occurred to the range?	<input type="radio"/>	<input type="radio"/>
a. If "yes" what part or area of the range was damaged?	-----	
	-----	
	-----	
	-----	
	-----	
<b>Chief Range Officer Details:</b>		
Name: _____ Signature: _____ Date: _____		

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