NZCF 151

FIREARMS TRAINING MANUAL

New Zealand
CADET
FORCES
Te Taua Tauira o Aotearoa

Amendment Certificate

Any proposals for amendments or additions to the text of this publication are to be made through the Area Coordinator Cadet Force Training and Support Unit (AC CFTSU).

The amendments in the under mentioned amendment list have been made in this publication.

Date	Amend No	Amendment Subject	Chapter & Section
12 Jan 18	**0**	**Complete re-write & re-formatting**	**Entire Manual**
2 Mar 18	1	Target Failure	Part 2 Lesson 3 para 2.79
9 May 18	2	Insertion of page numbers	Entire Manual
20 Nov 20	3	Terms – DFTT, Dress	Glossary and Terms
9 Dec 20	4	Deletion of reference to MSSA	Part one
15 Mar 23	5	Legislation updates.	Part one
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Introduction

This manual is for the use by Regular Force Staff of the three Cadet Force Training and Support Units and for Qualified NZCF Range Conducting Officers and Shooting Coaches at Cadet Unit level. Its purpose is to standardise all .22 rifle training throughout the New Zealand Cadet Forces.

This manual contains instructional material on the Marlin Model-XT .22 rifle to enable unit Range Conducting Officers to teach its maintenance and the handling and shooting skills to the standards necessary to pass the training tests, to participate in cadet unit range practices, compete in the National and International competition shoots and skills competitions for all three corps required by New Zealand Cadet Forces Cadets.

This is a ***living*** document. There will be regular amendments to ensure that the training is both safe and as up-to-date as possible. It is the responsibility of all users to note and advise any errors or inconsistencies that may be detected, or any changes that maybe required to the provisions of the manual because of changes in equipment, procedures or drills. Generally, any recommendation for change should be advised to the respective Area Co-ordinator who will pass it on to the S7 TDO, HQ NZCF. However, in the event that an error or inconsistency that may put any person at risk is noted, it is to be advised urgently through command channels to the Executive Officer (XO) New Zealand Cadet Forces.

Left Handed Cadets

The rifles issued to Cadet Units are for right-handed firers, i.e. the bolt is designed to be operated with the right hand. Instructors are to be aware that left-handed firers will use their left hand by reaching over the rifle to operate the bolt.

Safety Precautions and Requirements

Before every lesson with the rifle, instructors are to inspect all rifles and magazines used in the lesson(s) to ensure that the rifles are clear and no live ammunition is present.

Consideration should be made by all Cadet Units to purchase lock boxes for the purpose of securing building and armoury keys at off site locations.

There is a requirement for armoury, ammunition storage and building keys to be secured separately from each other. Only NZCF Officers are to be responsible for armoury and ammunition storage keys.

Prior to and after every range shoot there is to be a 100 percent check of ammunition. Results are to be reconciled in the unit ammunition log book and the NZCF 201 Firing Point Register.

Units are to ensure only the ammunition approved for use IAW NZCF 33 General Range instruction is to be removed from the unit ammunition storage. Any unused ammunition is to be returned immediately after the shoot has concluded.

The Marlin Model-XT .22 rifle is **NEVER** to be stripped by the user beyond the level taught in this manual.

Fig 1 - The Marlin Model-XT .22 rifle

Glossary and Terms

Accessory: An accessory is an article that is not an integral part of the firearm, but which is used in conjunction with it, for example a sling or an oil bottle.

Action: The ”action” is the term applied to the assembly of components parts that carries out the necessary cycle of operations in small arms and machine guns.

Accuracy: The measure of a weapons ability to consistently form groups of a proven or specified size and in a consistent relationship to the point of aim. **A firer's capacity is directly affected by the potential of the firearm to perform accurately and consistently.** The term accurate is relative to type and a firearm incapable of the expected performance is called erratic.

Ammunition: (Small Arms). Small arms ammunition refers to all types of ammunition used in pistols, rifles, revolvers, carbines, light support weapons, sub-machine guns, sub-calibre devices, and training aids with a calibre up to and now including 20mm.

Applied Safety: Applied safety refers to a safety device actuated by the firer. When applied it ensures that the firearm cannot be fired accidentally, for example a safety catch or lever.

Arc of Fire: The area within which firing is to be directed measured from the firing point line or area.

Ball Ammunition: The standard service projectile, most commonly consisting of a metal envelope enclosing a lead alloy or similar core. More recent ammunition developments of SS109 style have a hardened steel element inside the front of the envelope to improve its hard target behaviour but these continue to be termed ‘ball’ as the primary performance still falls short of true armour piercing levels.

Ballistics: Ballistics is the science of the characteristics and performance of firearms and projectiles. It is studied in three categories:

a. **Interior Ballistics**. The study of the processes that take place within a firearm as it is fired.

b. **Exterior Ballistics.** The study of the motion of projectiles between the firearm and the target or terminating point.

c. **Terminal Ballistics.** The study of the projectile on striking matters of greater density than air.

Bore: The bore is the interior of a firearm barrel through which the projectile passes. The bore diameter in a rifle barrel is most commonly measured across the lands.

Blowback Operation: Blowback operation is the principle of operation employed in some sub-machine guns where the action remains unlocked throughout the firing process. The inertia of a spring driven, heavy breech block moving forward is timed to maintain forward

dominance until such time as the pressure remaining in the bore is only sufficient to perform the extraction, ejection and either re-cocking or re-firing aspects of the process.

Breech: The breech of a firearm is the pressure resistant metal casing surrounding and behind the chamber.

Bolt: The component of a firearm that supports the base of the round while it is chambered, fired, and extracted.

Bullet: A bullet is a single projectile with the exterior shaped for aerodynamic and/or terminal effect.

Cadets Being Exercised, Exercise Participants, and Activity Participants: Any cadet who is authorised to fire during a live firing range practice and any cadet who is part of a cadet unit that contains the cadet(s) authorised to fire.

Calibre: The term classifies the cartridge with a bore class, most commonly the nominal diameter of the bore, often modified to show the date of adoption (30-06) or the designer (.257 Roberts). Dimensions of the lands and grooves in different barrels of a given calibre are not necessarily the same but will average to have approximately the same bore area in cross section. The two examples referred to are “30 Calibre” and “25 Calibre”, respectively.

Cant: Cant occurs when the relationship between the firearm and sight/s is at any angle other than vertical. The error in fall of shot that occurs with a canted firearm can vary as the error can involve the either or both of the Line of Sight and Axis of the Bore, by degrees. It is avoided by conscious action of the firer maintaining vertical.

Cartridge: A cartridge is an assembled round of ammunition in ready to fire form. Designation of sporting rifle cartridges often appears confusing because different means of identification are employed by manufacturers. Following are some examples of cartridge designation and markings, with brief explanations:

45-70-500	Cal - 45-in. Charge weight - 70 grains and the bullet weight 500-gr.
38-40	Calibre followed by black powder charge weight.
250-3000	Calibre and velocity.
35 Remington	Calibre and manufacturer.
30-06	Calibre and date of adoption as a military munition.
22 Hornet	Calibre and “fancy” name for cartridge.
45 ACP	Calibre and specified weapon (Auto Colt Pistol).
7 x 57	Continental System indicating calibre and length of the case in millimetres.

Cartridge Headspace: Cartridge headspace is the distance from the face of the bolt or breech block when locked to a point within the chamber which varies depending upon ammunition type. When the headspace is within tolerances specified the functions of expansion, obturation and primary extraction occur without problem.

Chamber: The chamber is the extension of the barrel that receives the cartridge. The rifling usually commences just forward of it.

Closed Bolt: Weapons that fire from a closed bolt position have a round locked in the chamber by the bolt or breechblock before the trigger is pressed (see Open Bolt).

Cocking: Cocking is the mechanical process carried out to bring the action of a firearm into a condition in which it will fire by action of the trigger with safety device released.

Conduct (Conducting): *Conduct* is the running of a live firing range shoot within the approved plan. The range conducting officer has planned the practice/shoot.

Cone of Fire: The cone of fire is the term for the three dimensional pattern formed in the air by either a burst from an automatic weapon or series of single shots fired at the same point of aim (the 'group' in flight). It is visualised as a vertical circle of Extreme Spread diameter. The Cone of Fire for the Marlin Model-XT .22 rifle is ± 40 mils in both elevation and azimuth.

Correct Zero Position: The correct zero position is the corrected location for the mean point of impact when zeroing from a range other than the sight setting.

Culminating Point: The culminating point is the highest point to which the bullet rises above the line of sight during its flight (trajectory) and occurs approximately two thirds of the distance along the projectiles flight. Every trajectory has a culminating point regardless of range as the trajectory curve increases downward from the moment of leaving the muzzle.

Cycle of Operation: The cycle of operation is the term applied to the necessary functions that the action or mechanism of a conventional small arms firearm is required to complete during the firing of a single round (for example feeding, cocking, loading, locking, firing, unlocking, extracting, and ejecting).

DFTT: Dry Firing Training Test Assessment sheets **only** are to be used.

Dress: Dress for all shooting activities are to be DPM's (E) for all three services (Sleeves down and boots).

Effective Scoring Area (ESA): A firer's grouping capacity or estimated grouping capacity visualised as centred on the target. ESA is used to assess hit probability at other ranges.

Ejection: Ejection is the process of expelling a fired case from the body of a firearm when the round has been expended.

Extraction: Extraction is the withdrawal of an empty case from the chamber. Primary extraction is the breaking of the grip of obturation, secondary is the rearward travel of the case to the point of ejection.

Extreme Spread (ES): Extreme spread is the term applied to the distance between the most distant effective shots of a group. Measurement is from outside to outside of shot holes.

Firing Point: The position on the ground or map from which firing takes place. It may take the form of a point for an individual firearm or line for a number of firearms.

Group: A group is the pattern of shot locations formed by a series of no less than three rounds, fired at apparently the same point of aim, observing the four marksmanship principles.

Grouping Capacity: A firer's average, proven ability at any range. It is achieved by averaging any number of Extreme Spread measurements, all shot locations included.

Grooves: A groove is the channel between each of the raised lands in the bore of the firearm.

Hangfire: A hangfire is defined as any perceptible delay in the initiation of the firing process within the firearm. The occurrence of a hangfire is classified as an ammunition failure.

Jump: The term "jump" refers to the deflection of the muzzle above or below the barrel axis during the firing process. When the line of departure of the bullet is above the barrel, the jump is positive, if below, it is negative.

Lands: Lands are the raised aspects of the rifling separating the grooves inside the bore of a firearm.

Line of Sight: Line of sight refers to a straight line passing through the sights to the point of aim on the target.

Line of Departure: The line of departure is a straight line along which the bullet points at the moment of leaving the muzzle. It is on the axis or centreline of the bore at this momentary point, commencing the curve characteristic of the trajectory immediately it is unsupported by the barrel.

Mean Point of Impact (MPI): The centre of a group. Can be established by a number of methods but is only truly representative of all shot locations if established mathematically to identify the True MPI. Other methods are only representative of outermost shot locations.

Mechanical Safety: Mechanical safety comprises the features embodied in a mechanism which are designed to mechanically ensure that:

a. the firearm cannot fire before the breech is properly locked.

b. the breech cannot be unlocked until the bullet has left the barrel and /or the gas pressure has dropped to a safe limit.

Muzzle Energy: Muzzle energy is the kinetic energy value of a bullet at the muzzle.

Muzzle Velocity: The velocity of the bullet at the muzzle of the firearm.

Obturation: Obturation in small arms is the prevention of leakage of high pressure gas by a sealing action during firing. There are three situations where it occurs:

a. **Primary Obturation.** This is the initial sealing action of the brass case and is caused when the primer or cap momentarily attempts to back out of its position in the case and is prevented from doing so by the immovable bolt face. This causes the cartridge case to move forward and contact the shoulder of the chamber in preparation for the massive increase in pressure from the burning propellant. One of the functions of 'acceptable' head space measurement is to assess the safe parameters of this action.

b. **Secondary Obturation.** This is the main sealing effect of the rapidly building pressure caused by the burning of the propellant. It occurs consistently and safely in part due to the cartridge positioning action of Primary Obturation.

c. **Forward Obturation.** Building gas pressure is prevented from proceeding forward past the projectile by the malforming of the soft outer projectile jacket tightly into the lands and grooves which begins soon after the projectile commences its forward movement into the Commencement of Rifling.

Officer in Charge of the Practice (OIC Practice): The *officer in charge of the practice* for a New Zealand Cadet Forces live firing range practice is to be either:

a. the New Zealand Cadet Forces officer holding the appointment of Cadet Unit Commander of the unit conducting the shoot; or

b. the New Zealand Cadet Forces regular force officer or warrant officer holding the appointment of Area Coordinator; or

c. the New Zealand Cadet Forces regular force non-commissioned officer holding the appointment of Senior Area Advisor.

Permissible Variation: The acceptable amount of error remaining between the Mean Point of Impact and Correct Zeroing Position during the zeroing process. The amount is variable and based on the formula, 1/4ES (1/4 GC), providing a resolution relative to the firers ability.

Plan (Planning): The *plan* is the detailed organisation of a live firing practice/shoot.

Practice/Shoot: The term *practice/shoot* is used to describe a cadet activity in which live firing takes place.

Primary Range Conducting Officer: Where the Officer In Charge of the practice determines that there is a requirement for a primary point of contact during the planning and preparation stage (of a NZCF 33, General Range Instruction), where two or more Range Conducting Officers have been appointed to conduct the same activity, the officer in charge of the practice may appoint one of the range conducting officers as the *primary range conducting officer*. The primary range conducting officer is to act as the primary point of contact up until the commencement of the activity only, at all other times the range conducting officer physically conducting the activity remains the sole point of contact while

exercising their appointment. The use of the *primary range conducting officer* will normally be appointed for a multiple unit range practice/shoot or a large inter-cadet unit shooting competition.

Range: The term *range* is applied to any area of land or indoor range where any live firing takes place. The range is bound by the template or shape of the range danger area of the particular type of ammunition, which may be contained in a larger arbitrarily bounded area denoted by natural features or map or chart coordinates.

Range Conducting Officer: The *range conducting officer* is a qualified, current and suitably experienced officer for a purpose-built range practice/shoot, who is appointed by the officer in charge of the practice/shoot to be responsible for the conduct and overall safety of the practice/shoot.

Recoil: The equal and opposite effect to the energy applied to releasing the projectile from the firearm. The pressure generated by the burning of the propellant charge exerts a force equally in all directions until the line of least resistance – the bullet, commences to move forward, through the bore. As this happens, an equal force rearward against the empty cartridge case and locked breech is building - producing a tendency for the firearm to move rearwards, or recoil. A further and usually more influential increase in this recoil effect occurs as the bullet leaves the muzzle because the gases, suddenly released, leave the barrel at a rapidly increased velocity and having a rocket like effect on the firearm. It is at this final point when most of the movement of the firearm in recoil actually occurs. Some understanding of the contribution of the gases released at the muzzle can be gained from understanding that recoil compensation devices fitted to the muzzle can dramatically reduce recoil by the redirection of this gas stream. Recoil usually includes some firearm rotation dictated by its fulcrum (change of angle around the small of the butt) and to a lesser degree, the distribution of weight in relation to the axis of the bore.

Repetition: Repetition is the firing of single shots, each requiring separate firing action of the trigger.

Rifling: Rifling is the spiral lands and grooves cut in the interior surface of a barrel from a little forward of the chamber to the muzzle. Although the engineering design of rifling varies, its common purpose is to spin a projectile at a rate predetermined to provide stability in flight. The spin rate imparted to a projectile at the muzzle is constant throughout its flight (see Lands and Grooves).

Safety Supervisor: The *safety supervisor* is the qualified or authorised NZCF officer, warrant officer or senior non-commissioned officer of SSGT(E) responsible for the safe conduct of a specific group or individual within the overall plan of the practice/shoot. A shooting coach for a purpose-built range practice is a safety supervisor. The *safety supervisor* need not have completed the Shooting Coaches course, but **is to** have been assessed and passed the current Dry Firing Training Tests for the firearm being used.

Spectator: Any person who watches the live firing activity and is not one of the range staff or activity participants.

Small Arm: small arm is defined as a weapon that is generally easily portable and fires flat trajectory projectile/s and usually considered to have calibres of 50 cal or less. As a range of 20mm weapons of small arms design enter the military environment it is likely the category will be extended to encompass these. This includes shotguns up to 12 Gauge.

Supported: When adopting a fire position, it is supported if any portion of the body or firearm is in contact with any object, which is inorganic to the body or fitted equipment. Slings, magazines, web equipment, and elbows rested on knees do not therefore constitute support.

Trajectory: Trajectory is the curved flight path of a projectile between the muzzle and the target.

Unsupported: When adopting a fire position, any rests may not be used to support the rifle. However, the use of a single point sling does not constitute a support.

Zeroing: Zeroing is the adjustment of the sights of a firearm to move the True MPI of a group of shot locations to a predetermined Correct Zeroing Position in relation to the point of aim.

PART 1 – The Firearms Safety Code
LESSON 1 – The Seven Basic Rules of Firearm Safety

INSTRUCTORS NOTES

Objective

1.1 At the end of this lesson the student is to be able to:

a. State the Seven Basic Rules; and

b. Explain the Seven Basic Rules.

Timings

1.2 Two 40-minute periods.

Method

1.3 A basic instructional lesson in the classroom.

Stores

1.4 The following stores are recommended:

a. laptop Computer and Multi Media Projector;

b. TV or Projector Screen;

c. Powerpoint presentation on the Seven Basic Rules; and

d. Marlins or demonstration rifles. If using demonstration rifles the instructor **is to** hold and be **in possession** of a current Firearms Licence and appropriate Endorsement.

CONDUCT OF THE LESSON

Safety Precautions

1.5 Inspect all firearms.

Revision

1.6 Nil revision.

Introduction

1.7 Firearms are designed for one thing and that is to kill. While a firearm may only be used to fire at targets on a range, it never becomes less dangerous or less capable of doing the job it was designed for. For this reason, it is essential that every person who has anything to do with firearms has a thorough understanding of the Firearms Safety Code to ensure that accidents don't happen.

Rule 1: Treat Every Firearm as Loaded

1.8 This rule is about creating a mind-set so that every time you handle a firearm you treat it as loaded by keeping the muzzle (where the projectile exits the barrel when fired) pointing away from yourself and other people, keeping your finger away from the trigger and being disciplined in controlling the firearm at all times.

a. A firearm must be treated and handled with respect at all times – a lack of care and attention when handling firearms has led to many tragic injuries and deaths that could have been avoided if the basic firearms rules were followed.

b. A key part of being safe is knowing the state of your firearm at all times. If you are unsure of its state, or the firearm has been out of your immediate control, you need to treat it as loaded (even if you think it is unloaded) and carry out a procedure called Safety Precautions (defined as "the actions we take to ensure something is safe and not dangerous").

Fig 1 - Only pass or accept an unloaded firearm with the muzzle pointed in a safe direction.

Rule 2: Always point firearms in a safe direction

1.9 Loaded or unloaded, always point the firearm muzzle in a safe direction. This means that if the worst happens and the firearm unintentionally discharges (fires), it cannot harm anyone. Attention to this rule requires constant discipline and focus to avoid injury or worse.

a. A safe direction is one in which, if your firearm discharges unintentionally, no one will be injured.

b. A safe direction may be pointing up towards the sky or down at the ground, depending upon the environment.

c. Remember that bullets can travel considerable distances, penetrate walls, ceilings and vehicles, and ricochet off hard surfaces.

Rule 3: Chamber a cartridge only when ready to fire

1.10 The purpose of this rule is to remind you to chamber a live cartridge into a firearm only when appropriate, such as:

a. when you are about to discharge the firearm, for example, on a shooting range.

1.11 Chambering a cartridge in your firearm is a deliberate and conscious decision and must only be done where you can safely and legally discharge it. Once you are no longer hunting or have finished firing the firearm, remember to unload it.

Rule 4: Identify your target beyond all doubt

1.12 This rule is critical for shooters to follow, as the consequences of failing to fully identify your target beyond all doubt can be immediate, tragic and catastrophic.

1.13 The firearms and calibres usually recommended for hunting (especially for big game) are capable of causing lethal injuries.

a. This means that if a hunter fails to identify their target and mistakes another person for a game animal, the results are almost always fatal.

Rule 5: Check your firing zone

1.14 A firing zone is the area a projectile travels through and may land after being discharged from a firearm towards a target, taking into account aiming error and the trajectory of the ammunition fired.

1.15 Ricochet danger

a. A ricochet is the change of direction and velocity induced in a projectile, missile or fragment caused by its impact with a surface. Like a skipping a stone across water, or a ball bouncing off a wall – these objects are not always predictable.

b. Ricochets are mainly caused by a projectile such as a bullet striking flat or hard surfaces, such as rocks, ice, trees, water, steel plates, concrete, log

ends, hard timbers and vehicles.

c. However, the type, construction and velocity of the projectile, and the angle at which the surface is struck mean other surfaces, such as flat dirt and sand, can sometimes cause a projectile to ricochet.

d. Shotgun steel shot and low velocity ammunition (e.g., subsonic cartridges) have an increased risk of ricochet.

Rule 6: Store and transport firearms and ammunition safely

1.16 Every firearm must be locked in, or immobilised and locked in, secure storage when the firearm is not under immediate and personal.

1.17 A firearms licence holder in possession of a firearm must:

a. ensure young children, or any people without a firearms licence, do not have ready access to firearms and ammunition; and
b. ensure that any firearm in their possession is stored separately from any ammunition for the firearm so that a person who obtains access to the firearm cannot obtain access to the ammunition.

1.18 These steps must include locking every firearm that is on the holder's premises and is not under the immediate and personal supervision of the holder or some other holder of a firearms licence in:

a. a lockable safe, cabinet, container, or receptacle of stout construction (secured to the structure of the premises) in which firearms may be stored; or

b. a lockable steel and concrete strongroom in which firearms may be stored; or

c. a lockable display cabinet or rack in which firearms are immobilised so that none of them may be fired.

Transporting Firearms

1.19 When transporting firearms or ammunition in a vehicle on a road or public access way you must ensure:

a. Firearms and ammunition are concealed from view from outside of the vehicle.

b. Firearms are made inoperable if readily possible by removing the bolt or other vital part which should be kept on the licence holder's person or stored out of sight separately from the firearms. If this is not possible (e.g. the firearm is a semi-automatic or lever action), then the firearms must be fitted with a trigger lock or travel in a locked case or carry bag.

c. Firearms are unloaded.

d. Ammunition is stored separately from any firearms and be in a locked glove box or similar storage area where practicable.

Rule 7: Avoid alcohol and drugs when handling firearms

1.20 Alcohol or drugs must never be consumed before or during shooting or when handling firearms (including cleaning or maintaining them).

a. There is no safe amount of alcohol you can consume and then handle a firearm safely. When you drink alcohol your judgement, reflexes, balance, coordination, manual dexterity and vision all become impaired, while your emotions are enhanced and distorted.

b. Some prescription medications dull, slow or otherwise affect your mental and physical reactions, so read the label and seek medical advice. If the information on your medication advises against driving or using heavy machinery, DO NOT handle or use a firearm.

c. Only consume alcohol or take medications (that may affect your reactions) after you have finished shooting or hunting for the day and the guns are unloaded and securely locked away.

d. Remember alcohol and some drugs can stay in your system for some time after consumption. Always allow sufficient time for the effects of alcohol or drugs to clear from your system prior to handling firearms

CONFIRM BY QUESTIONS AND PRACTICE

Conclusion

1.21 Confirm by questions to and from the class on entire lesson.

Summary

1.22 To include:

a. the importance of applying the Firearms Safety Code in all situations where firearms are involved; and
b. preview of next lesson.

LESSON 2 – Handling Firearms in the Field

INSTRUCTORS NOTES

Objective

1.23 At the end of this lesson the student is to be able to:

a. explain the Safe Handling of Firearms in the Field.

Timings

1.24 Two 40-minute periods.

Method

1.25 A basic instructional lesson in the classroom/outdoors.

Stores

1.26 The following stores are recommended:

a. multi media projector;

b. powerpoint presentation; and

c. Marlins or demonstration rifles. If using demonstration rifles the instructor **is to** hold and be **in possession** of a current Firearms Licence and the appropriate Endorsement.

CONDUCT OF THE LESSON

Safety Precautions

1.27 Inspect all firearms.

Revision

1.28 Questions on the Seven Basic Rules.

Introduction

1.29 It is important for every firearms user to be aware of the safety points that should be observed when handling firearms in the field. When hunting, every member of the party must observe the Basic Rules of the Arms Code especially rule two, 'Always Point Firearms in a Safe Direction'. Special care should be paid to the following hazards.

Barrel Obstruction

1.30 It is vitally important that the barrel is kept free of any obstructions at all times. Always observe the following points:

a. never plug the barrel with anything as a way of preventing obstructions or matter from entering it;

b. when moving in heavy scrub, ensure twigs and/or other matter does not cause barrel obstruction; and

c. if for some reason the muzzle comes in contact with the ground. Always stop and check for signs of obstruction.

Fig 9 - The end result of barrel obstruction

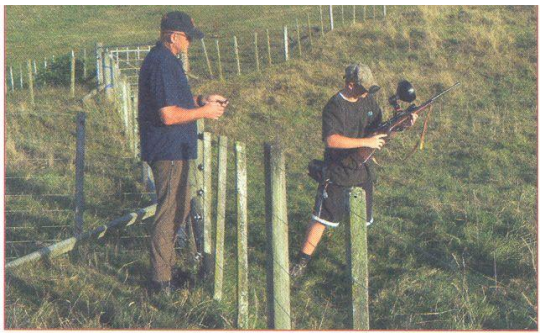
Crossing Fences

1.31 Injuries and even death have often occurred when shooters have tried to get over fences and obstacles incorrectly with loaded firearms. The following should be observed:

a. if two or more persons are together, one should climb over the fence or obstacle without a firearm, the unloaded firearms are then passed across with the actions open by the rest of the party;

b. if on your own, unload the firearm then pass it through the fence before climbing over, make sure the action is open and the muzzle is pointed in a safe direction. Never climb a fence or obstacle while carrying a firearm; and

c. firearms with exposed hammers require special care.



Figs 10 & 11 - Crossing fences

Ditches and Streams

1.32 Don't jump streams or rock hop while carrying firearms. Walk through the stream. Particular care must be taken when walking along rocky riverbeds or dry creek beds, which can be slippery or icy. Don't let all your attention be taken trying to sight game, watch your step; if you should fall or stumble, remember that your first and most important responsibility is to ensure the muzzle is pointed in a safe direction. Remember rule 2, 'Always Point Firearms in a Safe Direction'.

Use of Half Open Bolt or Action (In a Sate of Semi-readiness)

1.33 This state is only used when game has been sighted or you expect to flush it out at any time. Only the leader in the group should be in this state.

Rifles (Except Semi-automatics)

1.34 The firearm should be held in both hands, with the cartridge pushed partly forward in the breech (approx 2 cm of brass showing, depending on the calibre of the rifle). The action should be held open with one hand.

1.35 Do not close the bolt unless you know you have time to make a safe shot. If you did close the bolt and then aborted the shot, revert back to the semi-ready state or unload completely.

1.36 The most experienced hunters don't load the chamber until ready to fire. The beginner should follow this example.

Semi-automatic Rifles and Shotguns

1.37 It is not possible to use half open bolt with these firearms, so it is recommended that when you have seen or expect to flush out game at any moment, you cock the action and apply the pre-tested safety catch to safe. If a shot has been aborted, remember to reapply the safety catch or unload.

.22 Rimfire Rifles

1.38 Anyone who is keen to get a firearm and do some shooting should think about when and where the .22 rifle can be used.

1.39 A .22 rifle can be just as deadly as any other firearm. It must be handled with all the respect and care every firearm needs.

1.40 There are only **two** places where a .22 rifle can be **legally** used and they are as follows:

a. **at a rifle range.** Either indoor or outdoor. If using it in an indoor range, then only sub-sonic ammunition should be used; and

b. **on private property.** Only when the owner's permission has been obtained.

1.41 The .22 rimfire is not generally permitted on any land managed by the Department of Conservation (DoC), which includes Conservation Parks and National Parks.

Safety Catches

1.42 As previously explained the use of safety catches alone is strongly discouraged and should only supplement good firearms handling.

CONFIRM BY QUESTIONS

Conclusion

1.43 Confirm by questions to and from the class on entire lesson.

Summary

1.44 To include:

a. the importance of safe handling of firearms in the field; and

b. preview of next lesson.

LESSON 3 – Transporting Firearms

INSTRUCTORS NOTES

Objective

1.45 At the end of this lesson the student is to be able to; explain the requirements for transporting firearms.

Timings

1.46 Two 40-minute periods.

Method

1.47 A basic instructional lesson in the classroom.

Stores

1.48 The following stores are recommended:

a. Multi Media Projector;

b. Powerpoint Presentation; and

c. Marlins or demonstration rifles (if using demonstration rifles the instructor **is to** hold and **be in possession** of a current Firearms Licence with appropriate endorsement).

CONDUCT OF THE LESSON

Safety Precautions

1.49 Check all firearms if present.

Revision

1.50 Questions on Handling Firearms in the Field.

Introduction

1.51 Even before you buy your first firearm you need to know how you will get it home and where you will keep it. Once you leave the dealers shop you will be carrying your firearm in a public place and possibly on a bus, train, aircraft or inter-island ferry. Bear in mind that it is illegal to carry or use a loaded firearm in a vehicle. Remember also to make sure the action is open when around other people.

1.52 You are strongly advised to get a padded cover or hard case in which to carry your firearm. This ensures the firearm is protected and stays in good condition. It also makes it less obvious so is less likely to alarm other members of the public.

Fig 12 - Use of a hard cover or case

1.53 You must have a particular lawful, proper and sufficient purpose to have firearms with you, ensure you have your firearms licence with you at all times when you are carrying, transporting or using your firearm.

In Private Vehicles (Car)

1.54 The following are a few rules to be observed when transporting your firearm in a car:

a. firearms and ammunition are concealed from view from outside of the vehicle.

b. firearms are made inoperable if readily possible by removing the bolt or other vital part which should be kept on the licence holder's person or stored out of sight separately from the firearms. If this is not possible (e.g., the firearm is a semi-automatic or lever action), then the firearms must be fitted with a trigger lock or travel in a locked case or carry bag

c. fires are unloaded

d. ammunition is stored separately from any firearms and be in a locked glove box or similar storage area where practicable.

e. any firearms or ammunition may be left unattended in a vehicle during a break in a journey for up to 60 minutes provided:

(1) The licence holder remains in the immediate area or vicinity of the vehicle.

(2) The firearms or ammunition are still secured and out of sight.

(3) If possible, vital parts of the firearms remain in the licence holder's possession.

(4) The vehicle is locked, windows are closed, and keys remain in the licence holder's possession

Mail/Courier

1.55 persons selling non-prohibited firearms or ammunition by mail order or internet need the purchaser to complete a mail order purchase form and have it signed by Police confirming that the purchaser's firearms licence has been inspected and that Police are satisfied the person is fit and proper to purchase the specified firearm or ammunition. The mail order form is available on Te Tari Pūreke website. The signed form will be sent to the seller by the Police.

CONFIRM BY QUESTIONS

Conclusion

1.56 Confirm by questions to and from the class on entire lesson.

Summary

1.57 To include:

a. the importance of safe handling of firearms; and

b. preview of next lesson.

LESSON 4 – Types of Firearms and their Actions

INSTRUCTORS NOTES

Objective

1.58 At the end of this lesson the student is to be able to:

a. identify the different Types of Firearms Available; and

b. identify the different Types of Actions.

Timings

1.59 Two 40-minute periods.

Method

1.60 A basic instructional lesson in the classroom.

Stores

1.61 The following stores are recommended:

a. Multi Media Projector;

b. Powerpoint Presentation; and

c. Marlins or demonstration rifles (if using demonstration rifles the instructor **is to** hold and **be in possession** of a current Firearms Licence with appropriate endorsement).

CONDUCT OF THE LESSON

Safety Precautions

1.62 Check all firearms if present.

Revision

1.63 Questions on the Transportation of Firearms.

TYPES OF FIREARMS

1.64 For reasons of safety and practicality, it is important that all firearms users have a basic knowledge of the characteristics of the different types of firearms available to them.

1.65 There are a number of terms, which in general are used to describe parts of and functions of firearms. The three basic parts of any firearm can be summarised by the expression Lock, Stock and barrel. The following is a description of each:

a. **Lock.** The mechanism that fires the cartridge. Today more commonly referred to as the action;

b. **Stock.** The part by which, the firearm is held. The woodwork comprises the butt and fore-end; and

c. **Barrel.** The steel tube through which, the projectile is fired.

1.66 There are a number of terms used to describe the mechanical functions of a firearm, which are as follows:

a. **Feeds.** Inserts a live round into the chamber;

b. **Cocks.** Compresses the firing pin main spring and engages the firing pin to the trigger mechanism;

c. **Locks.** Locks the bolt tight to the breech, ready for firing;

d. **Unlocks.** Unlocks the bolt from the breech;

e. **Extracts.** Removes the case/bullet (fired or unfired) from the chamber; and

f. **Ejects.** Throws the case/bullet (fired or unfired) clear of the firearm.

CONFIRM BY QUESTIONS

Air Arms

1.67 These can be rifles, pistols or weapons that have a gas or compressed air firing mechanism. Under the Arms Act 1983, 'airgun' includes air rifles, air pistols, BB guns, soft air pellet guns and paintball guns. Some airguns are extremely dangerous in that their muzzle velocity can be higher than that of a .22-rimfire rifle, up to 381 metres per second (1250 feet per second).

Fig 13 - Air rifle

Fig 14 - Paintball rifle *Fig 15 - Paintball pistol*

1.68 It must be stressed that air arms are real firearms and are quite capable of inflicting serious injuries. Considerable care is necessary when using them in built up areas.

1.69 Anyone 18 years of age or older can possess and use an air gun.

1.70 Anyone under 18 years of age may use an airgun if:

a. they hold a New Zealand Firearms Licence; or

b. they are under the 'immediate supervision' of a firearms licence holder or a person 18 years of age or older.

1.71 Anyone under 16 years of age must always be under the 'immediate supervision' of a firearms licence holder or a person 18 years of age or older.

1.72 **Pre-Charged Pneumatic Air Rifle.** Any person who wishes to purchase a pre-charged pneumatic (PCP) air rifle is to have a firearms licence. These air rifles have been reclassified by the Police as being a "specially dangerous" firearm.

1.73 **Immediate Supervision.** Immediate Supervision means that the licenced or older person is within reach and in control of the person using the air gun. The person providing the supervision must be able to take control of the air gun. They cannot be in possession or control of another firearm or air gun.

1.74 On a Range or Paintball field: the rules in place, fenced field and supervision of umpires, referees, Range Conducting Officer, Qualified Shooting Coach or Safety Supervisor go toward immediate supervision.

Restricted Air Arms

1.75 A new category of "restricted airguns" has been created. A restricted airgun is an airgun that:

a. with or without any of its attachments has the appearance of being a pistol, a restricted weapon; or

b. is designed for use in airsoft or paintball sports and with or without any of its attachments has the appearance of being a firearm capable of full automatic fire.

1.76 A permit to import is now required to import restricted airguns and there must be a special reason for the import. The same process that is currently applied to the importation of pistols, restricted weapons and will be used. Applications can be made to your nearest Arms Office.

Pistols

1.77 Pistol means any firearm that is designed or adapted to be held and fired with one hand and includes any firearm that is less than 762mm in length.

Fig 16 - Pistol

1.78 If you wish to possess a pistol you are required by law to hold an endorsement on your firearms licence. You are required to either belong to a Pistol Club recognised by the Commissioner of Police (B endorsement) or be a bona fide collector (C endorsement).

1.79 Pistols can only be fired on an approved Pistol Club range. You need to obtain a special permit, known as a 'permit to procure' from the Police so you can buy a pistol.

Antique Firearms

1.80 An antique firearm is any firearm which is held in the possession of any person, solely as an antique (but not as a copy or replica of an antique) and which is not designed for and is not capable of firing rimfire or centre fire cartridge ammunition.

1.81 Antique firearms should not be fired. This can be dangerous especially if it is in poor condition. An antique firearm is normally only suitable as a collector's item, an heirloom, a display or kept because of its special significance.

Fig 17 - Antique firearm

Rifles

1.82 A rifle normally fires a single bullet and in New Zealand, rifles generally range in calibre from .17 to .45 calibres. All are used for target shooting and hunting.

1.83 The following are the animals that each calibre is suited for hunting:

a. the .17 and .22 rimfire is suitable for small game such as rabbits, hares and possums;

b. the centrefire .22 is suitable for hunting goats and wallaby;

c. the .243 is about the smallest calibre that should be used for deer hunting;

d. some larger cartridges are not suitable for hunting pigs and deer, but the following can be used:

(1) .308 Winchester (7.62mm NATO);

(2) 7.62 x 39;

(3) .270 Winchester;

(4) 30.06;

(5) .303 British;

(6) 6.5 x 55;

(7) 7mm and 8mm Mauser; and

(8) 30.30 Winchester.

1.84 Police strongly recommend that you join a sport-shooting club where you can get information and advice from experienced firearms users.

Fig 18 - Bolt action rifle

Shotguns

1.85 These include single and double-barrelled shotguns. Ammunition is fed into the open chamber(s) by hand. The barrel(s) are then closed, allowing the cross bolt to lock the action. The firearm is now ready to fire. Moving the locking lever to one side, which operates the cross bolt, opens the barrel(s). as the action breaks open, the spent cartridges are extracted. Some guns have automatic ejectors, while others require cartridges to be extracted by hand.

1.86 Shotguns are used for clay target shooting and to hunt small animals such as rabbits. They are the only firearms allowed for hunting game birds on the wing (in flight). There are about 200 pellets in a 12-gauge cartridge that spread out when they leave the muzzle. At 30 metres they will strike in a circular pattern nearly a metre across.

1.87 In hunting the bigger and stronger the game, the more powerful the cartridge must be to kill the game humanely.

1.88 Shotguns themselves come in a variety of calibres; 410 gauge, 20 gauge and the 12 gauge being the largest.

1.89 Shotgun cartridges are loaded with different sizes of shot (pellets) as follows:

a. 7, 8 and 9 shot for smaller birds;

b. 4, 5 and 6 shot for rabbit and ducks;

c. 3 and 2 shot for swan and geese; and

d. buckshot or a single solid slug for pigs and deer at close range.

1.90 The size of the shot for clay target shooting depends on the competition.

Fig 19 - Shotgun

TYPES OF ACTIONS

1.91 All cartridge firing firearms used for target shooting or hunting have the following things in common; the cartridge is fed into the chamber; it is locked there by the action; the action is cocked; it is fired; it is unlocked; and the empty cartridge case is extracted and ejected.

The Bolt Action

1.92 The bolt action is one of the simplest and most trouble-free firearm actions. Starting from the unloaded condition the action is unlocked by lifting the bolt handle and pulling it back. A cartridge is fed into the chamber by pushing the bolt forward. The bolt handle is then turned downwards, locking the bolt and cartridge in place. A firing pin is usually cocked by movement of the bolt or bolt handle and when the trigger is squeezed the pin is released firing the cartridge. Lifting the bolt handle again and pulling the bolt back then ejects the empty cartridge case.

Fig 24 - The bolt action rifle

The Lever Action

1.93 To many young people, this type of firearm represents their first impression of a rifle, due to its frequent appearance in western movies. This type is suitable for both left and right-handed firers.

1.94 Moving the lever down unlocks, extracts, cocks and ejects. Moving the lever back up feeds and locks.

1.95 Particular care is required when using this type of firearm because of the following:

a. the exposed hammer which may catch on clothing or when climbing over or through fences;

b. the tubular magazine, some models may be more than 70 years old and the magazine spring may be weak or broken. Combined with a dent in the tube, dirt or bent cartridge, this could cause a cartridge to be held up. A subsequent knock or even gravity could result in the cartridge left in the magazine being released and carried towards the action. If the magazine is the removable type, you must ensure you don't knock it while removing or replacing it; and

c. the lever action can be a problem as much of the mechanism is exposed when you open it. This can lead to scrub being caught in the action and make it difficult to clean.

Fig 25 - The lever action

The Pump or Slide Action

1.96 This is a similar action to the lever action, though operated by moving the front section of the stock/fore-end instead of a lever. Usually it has a tubular magazine and is susceptible to much the same problems as the lever action firearms. Some models have exposed hammers. Sliding the action rearward unlocks, extracts, cocks and ejects. Sliding the action forward feeds and locks.

Fig 26 - The pump or slide action

The Semi-Automatic Action

1.97 There are two distinctive types of semi-automatic firearms and they are as follows:

a. **Blowback Action.** In this type after firing a round the block remains cocked to the rear. When the trigger is squeezed:

(1) The block moves forward and a round is fed into the chamber;

(2) The firing pin strikes and fires the round; and

(3) The bolt is driven to the rear again, extracting and ejecting the spent cartridge, leaving the firearm cocked and ready to fire another round.

b. **Gas Operated Action.** In this type after firing a round the block automatically moves through its cycle to feed another round into the chamber:

(1) When the trigger is squeezed the firing pin strikes and fires the round;

(2) The block then moves rearward extracting and ejecting the spent cartridge and compressing the return spring; and

(3) The block is driven forward feeding the next round into the chamber and compressing the firing pin to re-cock the action ready to fire.

Fig 27 - The semi-automatic action

CONFIRM BY QUESTIONS

Conclusion

1.98 Confirm by questions to and from the class on entire lesson.

Summary

1.99 To include:

a. the importance of safe handling of firearms; and

b. preview of next lesson.

LESSON 5 – Legal Requirements for Firearms Users

INSTRUCTORS NOTES

Objective

1.100 At the end of this lesson the student is to be able to:

a. identify the different Types of Firearms Licences; and

b. identify the different Types of Endorsements.

Timings

1.101 Two 40-minute periods.

Method

1.102 A basic instructional lesson in the classroom.

Stores

1.103 The following stores are recommended:

a. Multi Media Projector;

b. Powerpoint Presentation; and

c. Arms Act 1983.

CONDUCT OF THE LESSON

Safety Precautions

1.104 Nil

Revision

1.105 Questions on the Types of Firearms and Actions.

TYPES OF LICENCES

Introduction

1.106 A New Zealand firearms licence allows you to have and use unsupervised:

a. non- prohibited firearms that do not require an endorsement

b. ammunition,

c. especially dangerous airguns, including pre-charged pneumatic (PCP) air rifles.

1.107 A firearms licence holder can supervise someone without a licence using a non-prohibited firearm, unless we revoked that person's licence.

a. The licence holder:

(1) Must be within reach of the firearm and able to control it

(2) Must not be using another firearm at the same time

1.108 New Zealand firearms licence lifespan.

a. A firearms licence lasts five or 10 years, depending on the circumstances of your application.

b. Your new licence lasts 10 years if you apply before your current licence expires

c. Your new licence lasts five years if:

(1) your firearms licence expires before you apply for a new one

(2) your previous firearms licence was revoked or surrendered

(3) you've never had a firearms licence

1.109 Appling for a firearms licence

a. Be 16 years of age or older

b. Not have had a firearms licence revoked in the last 5 years

c. Not be a disqualified person from having a firearms licence

1.110 Before you get a firearms licence, the authority must find:

a. You are fit and proper person to have and use firearms

b. you have secure storage at all addresses where you store firearms and ammunition

c. no-one who has had a firearms licence revoked, been disqualified from having a firearms licence, or been found not fit and proper to have and use firearms, has access to your firearms and ammunition

Offences with Firearms

1.111 There are many provisions of the Arms Act 1983 which place obligations on firearms users and can lead to prosecution if contravened. Most of these provisions are common sense but if you are in any doubt, or require more information, you should contact a Solicitor, the Police or obtain a copy of the Arms Act and Regulations. The offences applying to fire arms licence holders can be referenced in the Fire Arms Safety Code Appendix 1, pg 97. Firearms Safety Code 2022 PDF

Act to Bind the Crown

1.112 The following is an extract from the Arms Act 1983 that enables New Zealand Cadet Force Officers who do not have a firearms licence but have a **current** NZCF 40, Range Conducting Officers Certificate to transport **only NZDF Issued** .22 rifles and ammunition, from the unit firearms storage to the range and from the range back to the unit firearms storage or to a certified gunsmith. The Officer who is transporting the rifles **is to be in uniform**. The relevant extract from the Act is as follows:

3 Act to Bind the Crown

(1) Subject to subsections (2) and (3), this Act Binds the Crown.

(2) Nothing in this Act renders unlawful the carriage or possession of firearms, airguns, pistols, restricted firearms, ammunition, or explosives –

(a) by any person in the course of that person's **duties** as –

(i) a member of the New Zealand Defence Force or a member of Cadet Forces.

TYPES OF ENDORSEMENTS

1.113 There are six types of endorsements and these are:

a. **Pistol-** Pistol club member

b. **Pistol / restricted weapon / prohibited firearm / prohibited magazine.**

(1) Bone fide collector of firearms

(2) Heirloom or memento

(3) Theatre, film, and television

(4) Various capacities involved in wild animal recovery or controlling wild animals or animal pests (section 4A(1)(f) to (j))

(5) Employee of a licensed dealer

CONFIRM BY QUESTIONS

Conclusion

1.114 Confirm by questions to and from the class on entire lesson.

Summary

1.115 To include:

a. the importance of selecting a firearm type suitable for whatever activity you are going to be involved in and know how it operates; and

b. the importance of knowing the duties and obligations of firearms owners and users.

PART 2 – Training with the Marlin Model-XT .22 Rifle

LESSON 1 – Introduction and Safety Precautions

INSTRUCTORS NOTES

Objective

2.1 At the end of this lesson the student is to be able to:

a. state the characteristics and technical data; and

b. carry out safety precautions.

Timings

2.2 One 40-minute period.

Method

2.3 A basic indoor instructional lesson.

Stores

2.4 The following stores are required for the lesson:

a. each student:

(1) .22 rifles (1 per student if possible).

(2) Magazines.

b. the instructor. The instructor is to have same stores as the student plus the following:

(1) Multi-media.

(2) Powerpoint presentation.

(3) Any drops as required.

Preparation

2.5 Prepare and check powerpoint or drops for the following:

a. Characteristics of the Marlin Model-XT; and

b. Technical data of the Marlin Model-XT.

2.6 Strip and position a Marlin and its accessories on a table in preparation for the naming of the parts.

2.7 Prepare a Marlin Model-XT for demonstrations.

Miscellaneous

2.8 When handling the various parts, the instructor is to name them and their purpose. However, at this stage, the cadet is not expected to memorise all the names or their purpose.

CONDUCT OF THE LESSON

Safety Precautions

2.9 Inspect all firearms and magazines.

Revision

2.10 Nil.

Introduction

2.11 Prior to teaching cadets the Dry Firing Training Tests (DFTTs) for the .22 rifles it is necessary for the cadets to understand the characteristics, how to carry out the safety precautions, how to strip, clean, assemble and name the major parts of the rifle. Knowing this enables the cadet to understand how and why things are done.

Characteristics of the Marlin Model-XT

2.12 The Marlin Model-XT is a lightweight, bolt action rifle used for:

a. training cadets in firearms safety; and

b. national and international shooting competitions.

2.13 The Marlin Model-XT replaces the Norinco JW-15A as the NZCF live firing rifle.

Technical Data for the Marlin Model-XT

2.14 The following is the technical data relating to the Marlin Model-XT .22 rifle:

a. **calibre:** .22 inch Long Rifle (5.58mm);

b. **rifling:** 16 lands & grooves with a right hand twist;

c. **barrel length:** 55.88 cm approx (22 inches);

d. **muzzle velocity:** 330 mps (1082 feet per second);

e. **magazine capacity:** 7 rounds (loaded with 5 rounds for shooting);

f. **overall weight:** 2.7 kilograms (6 pounds);

g. **overall length:** 104.14 cm approx (41 inches);

h. **rear sight:** Williams WGRS-54 Peep Sight;

i. **front sight:** front blade;

j. **range of sights:** zeroed for 25 metres (27 yards).

Safety Features of the Rifle

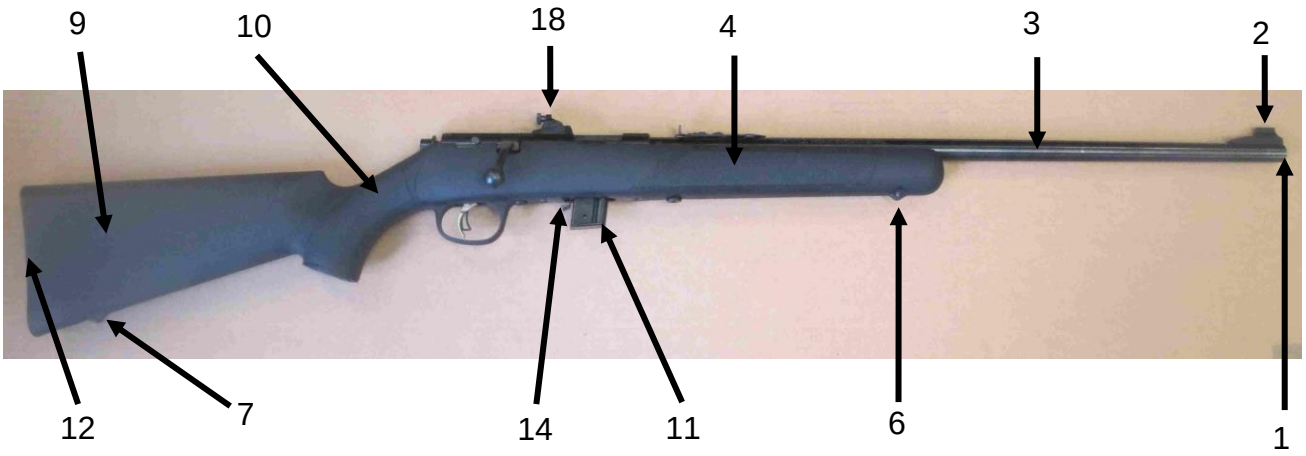
2.15 The safety features for the Marlin Model-XT rifles are as follows:

a. **Trigger Release** – The trigger release, when squeezed allows the trigger to be depressed which starts the firing sequence;

b. **Trigger Guard** – Piece that surrounds the trigger to protect it from being squeezed or bumped accidentally;

c. **Safety Catch** – Mechanical device that blocks the trigger or hammer to help prevent accidental firing; and

d. **Corresponding Bolt and Rifle Numbers –** Bolts and rifles are matched as a close fitting set. Care should be taken not to mix then up.



Figs 29 & 30 - Parts of the rifle

1. Muzzle
2. Foresight
3. Barrel
4. Fore-end
5. Trigger Guard
6. Front Sling Swivel Stud
7. Rear Sling Swivel Stud
8. Trigger
9. Butt
10. Small of the Butt
11. Magazine
12. Butt Plate
13. Safety Catch
14. Magazine Release
15. Trigger Release
16. Bolt Handle
17. Striker Knob
18. Williams WGRS-54 Peep Sight

Major Parts of the Marlin Model-XT Rifle

2.16 Learning to handle a rifle is made easier if you have a basic knowledge of the different parts of the rifle and their function. The major parts and their functions for the current in service .22 rifles are as follows:

Part	Description
Muzzle	The end of the barrel through which the projectile (bullet or shot) exits.
Front Sight	Device used for aiming by aligning a front and rear sight.
Barrel	Metal tube through which the projectile travels.
Bore	Inside of the firearm barrel through which the projectile travels when fired.
Breach	Rear end of the barrel.
Fore-end	Front portion of the stock extending under the barrel in front of the receiver; usually held by the non-master hand to help support the firearm.
Firing Pin	A pin that strikes the primer of a centre fire cartridge or the rim of a rim-fire cartridge, causing ignition.
Receiver	Metal housing for the working parts of the action.
Trigger Guard	Piece that surrounds the trigger to protect it from being squeezed or bumped accidentally.
Front & Rear Sling Swivels	The parts, which the sling is attached.

Part	Description
Trigger	Small lever that is squeezed to start the firing sequence.
Trigger Release	The trigger release, when squeezed allows the trigger to be depressed which starts the firing sequence.
Butt	The part of the stock that you hold against your shoulder when shooting.
Stock	The part of a rifle which is held, or braced, against the shooters body.
Small of the Butt	The part of the gunstock the master hand grips.
Magazine Latch Release	The device used for releasing the magazine from the magazine housing.
Magazine Well	Place where the magazine is located when placed in the rifle.
Magazine	Container on a repeating firearm that holds ammunition before it's loaded into the chamber; usually tubes or boxes attached to the receiver.
Butt Plate	The metal, plastic or rubber padding on the Butt.
Rear Sight	The device that aids the eye in aiming the barrel of a firearm in the proper direction to hit the target.
Bolt	Moveable metal block that seals a cartridge into the chamber on some actions.
Bolt Handle	Handle used to open and close a bolt action.
Safety Catch	Mechanical device that blocks the trigger or hammer to help prevent accidental firing.
Extractor	The device, which grips the cartridge case and withdraws it from the chamber after firing.
Face of the Bolt	The flat surface where the base of the round sits when it is chambered prior to firing.
Aperture	The small hole you look through to sight the rifle.
Chamber	Base of the barrel used to hold the cartridge or shotshell ready for shooting.

Close-up of Major Parts of the Rifle

Fig 31 - Muzzle

Fig 32 - Foresight blade

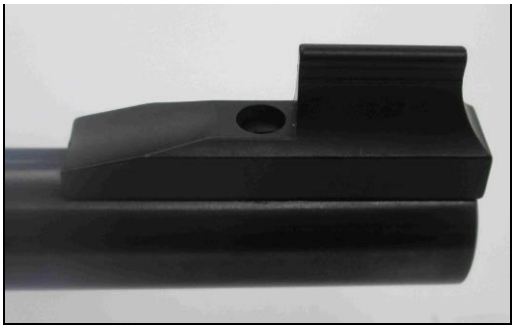


Fig 33 - Foresight blade (side view)

Fig 34 - Fore-end, Barrel & Front Sling Swivel stud

Fig 35 - Small of the butt, Trigger, Trigger release & Trigger guard

Fig 36 - Magazine well & Magazine latch release

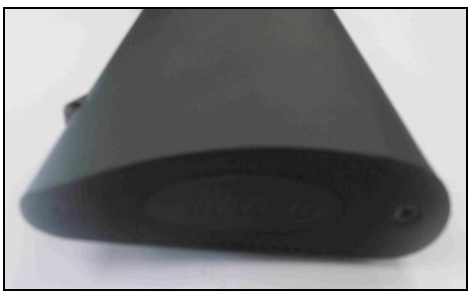


Fig 34 - Butt plate

Fig 35 - Butt & Rear sling swivel stud

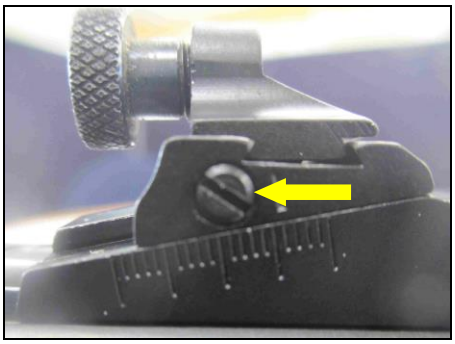


Fig 37 – Elevation locking screw & Rear aperture

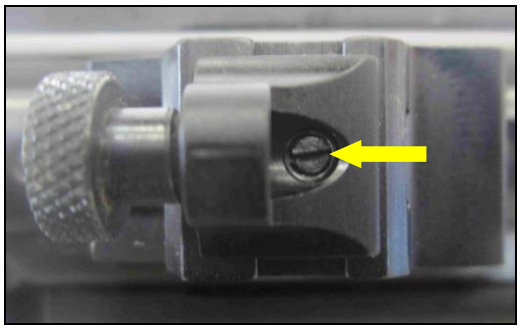


Fig 38 - Deflection locking screw

Fig 39 - Bolt & Bolt handle

Fig 40 - Safety catch (fire)

Fig 41 - Safety catch (safe)

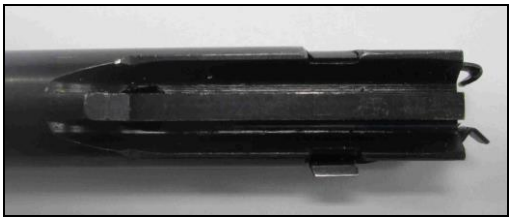


Fig 42 - "W" Cut and Extractor

Fig 43 - Rifle serial number

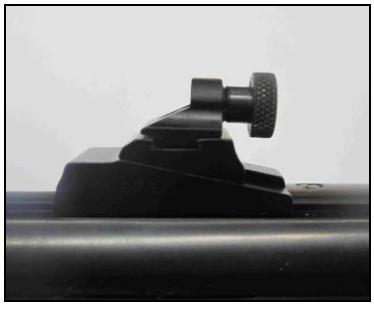


Fig 44 - Williams WGRS-54 Peep Sight

Fig 45 - Chamber & Election port

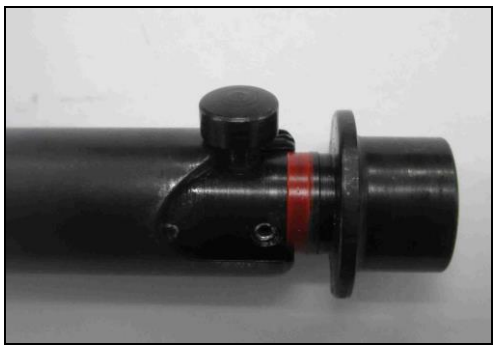


Fig 46 - Striker cam pin, Cocked indicator & Striker knob

CONFIRM BY PRACTICE AND QUESTION & ANSWERS

Safety Precautions / Fetch the Rifle

2.17 Before and after any training or handling takes place with the rifles, or being told to fetch a rifle, Safety Precautions are to be carried out as follows:

a. take up the rifle and point the rifle in a safe direction;

b. remove the magazine (if fitted);

c. ensure the bolt is fully to the rear (if forward); and

d. check the chamber, body and face of the bolt (three point check) are clear of rounds or obstructions.

CONFIRM BY PRACTICE

2.18 These safety precautions are to be carried out at the following times:

a. whenever rifles are placed into or taken out of the firearms storage;

b. before and after any instructional period;

c. before being placed onto or taken off the firing point;

d. before any detail leaves and moves forward of the firing point;

e. prior to removing rifles from the range; and

f. when taking up a rifle for the first time.

Handing Over a Rifle or Proving

2.19 If required to hand a rifle over to someone else or to receive a rifle from someone else, the following actions are to be carried out:

a. ensure the bolt is fully to the rear;

b. inspect the chamber, body and face of the bolt are clear of rounds or obstructions (three point check);

c. show the other person the chamber, body and face of the bolt are clear; and

d. hand over the rifle.

CONFIRM BY PRACTICE

Conclusion

2.20 Confirm by questions to and from the class on entire lesson.

Summary

2.21 To include:

a. the importance of carrying out safety precautions properly; and

b. the importance of proper maintenance.

LESSON 2 – Stripping, Assembling and Cleaning the .22 Rifle

INSTRUCTORS NOTES

Objective

2.22 At the end of this lesson the student is to be able to:

a. strip and assemble the Marlin Model-XT; and

b. clean the Marlin Model-XT.

Timings

2.23 Two or Three 40-minute periods.

Method

2.24 A theory and practical instructional lesson.

Stores

2.25 The following stores are recommended:

a. Marlin Model-XT rifles (1 per student if possible);

b. .22 cleaning rods & eyelet;

c. .22 copper brush;

d. 1” x 1” cleaning patches;

e. gun oil (CLP or similar product);

f. tooth brush; and

g. rags.

Note: A 2” wide paint brush is also a useful item and can be used to clean any dust or dirt from hard to reach places.

Preparation

2.26 Check that cleaning kits are complete and that all oil containers are full.

2.27 If the lesson is to be taken outdoors ensure that each cadet has a groundsheet to provide a clean working surface.

Miscellaneous

2.28 Stripping is taught in a sequence designed to ensure that parts are stripped without damage, and to aid re-assembly. To prevent damage to parts, only the recommended tools, cleaning aids and rifle oil are to be used. No time limit is to be imposed during stripping and cleaning practice. Parts are to be laid on a dry clean surface and are to be free from dirt before assembling. Stripping further than taught is forbidden. The only person authorised to carry out additional stripping is a qualified RNZAF armourer.

CONDUCT OF THE LESSON

Safety Precautions

2.29 Inspect all firearms and magazines.

Revision

2.30 Q & A on characteristics and technical data.

Introduction

2.31 The Marlin Model-XT is the rifle that has been issued to NZCF Cadet Units and therefore it is the CUCDRs duty to ensure that the rifles are maintained in a serviceable condition. With this in mind it is important that the cadet knows how to strip and assemble the rifle so that they can clean it, and inspect the working parts for damage.

Cleaning and Lubrication of Firearms Miscellaneous Instruction

2.32 Break-free CLP has been introduced into service. It is to replace all products currently used for the cleaning and lubrication of all firearms and related equipment.

2.33 Break-free CLP is to be used on all firearms in accordance with these instructions for the Marlin Model-XT rifles.

2.34 No alternative cleaning, lubrication or preservative products are to be used.

2.35 Warning. Avoid contact with skin and eyes and avoid breathing vapour.

2.36 The following cautions are to be adhered to when using CLP:

a. CLP is not to be applied to a hot surface where the temperature is greater than the hand can bear.

b. CLP is not to be used in a cleaning bath.

c. CLP is not to be used on plastic components.

d. CLP is not to be used as a spray.

2.37 Should a situation arise that indicates the current issue of CLP is not performing or is inadequate for the role in which it is being used, details are to be reported to the AC CFTSU.

Stripping the Marlin Model-XT

2.38 The following information is produced to give guidance to NZCF units, on how to properly maintain the Marlin Model-XT .22 Rifle. Cadet units are to maintain their firearms in accordance with the following paragraphs. Cadet units are also **NOT** to carry out any **modifications** to any part or parts of the rifle(s). Any rifle(s) that have any defects etc are to return them to the AC CFTSU for repair by qualified RNZAF Base Armourers.

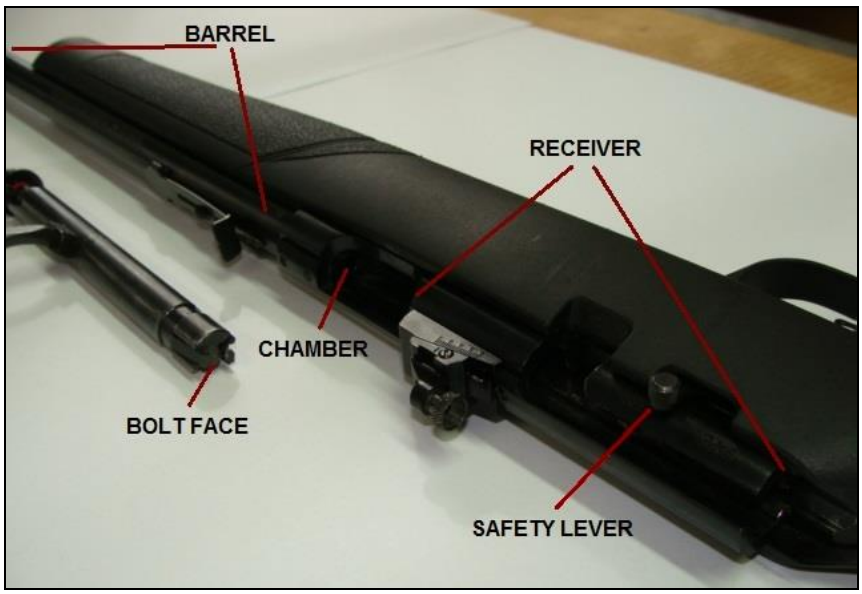


Fig 47 - Overview of Marlin Model-XT

2.39 Strip the rifle as follows:

a. carry out safety precautions to ensure the rifle is clear;

b. set the safety lever forward to the 'FIRE' position;

c. open the action by raising the bolt handle; and

d. remove the bolt by squeezing the trigger and at the same time pulling the bolt rearward and sliding it out of the receiver.

Cleaning the Marlin Model-XT

*Fig 48 - **Example** Cleaning Kit Contents for Marlin Model-XT*

2.40 The following are some points for cleaning that are to be adhered to at **all** times:

a. before using the CLP oil from the bottle, ensure you shake the bottle vigorously to allow the different elements of the oil to thoroughly mix; and

b. at no time are any abrasive components or material to be used to clean the external surfaces of the bolt or rifle.

2.41 Clean the bolt as follows:

a. using a tooth brush or similar device carefully scrub the bolt face paying attention to the area under the extractor claw and then wipe clean; and

b. check entire bolt for cleanliness/corrosion, clean any areas with light oil as this should remove light corrosion.

Note: When cleaning the bolt face, be careful not to damage or bend the extractor. Ensure no oil is left on bolt face when cleaning is complete.

2.42 Clean the barrel/receiver as follows:

a. scrub the bore from chamber end to muzzle, with a lightly oiled copper brush, at least 3 times (fig 49);

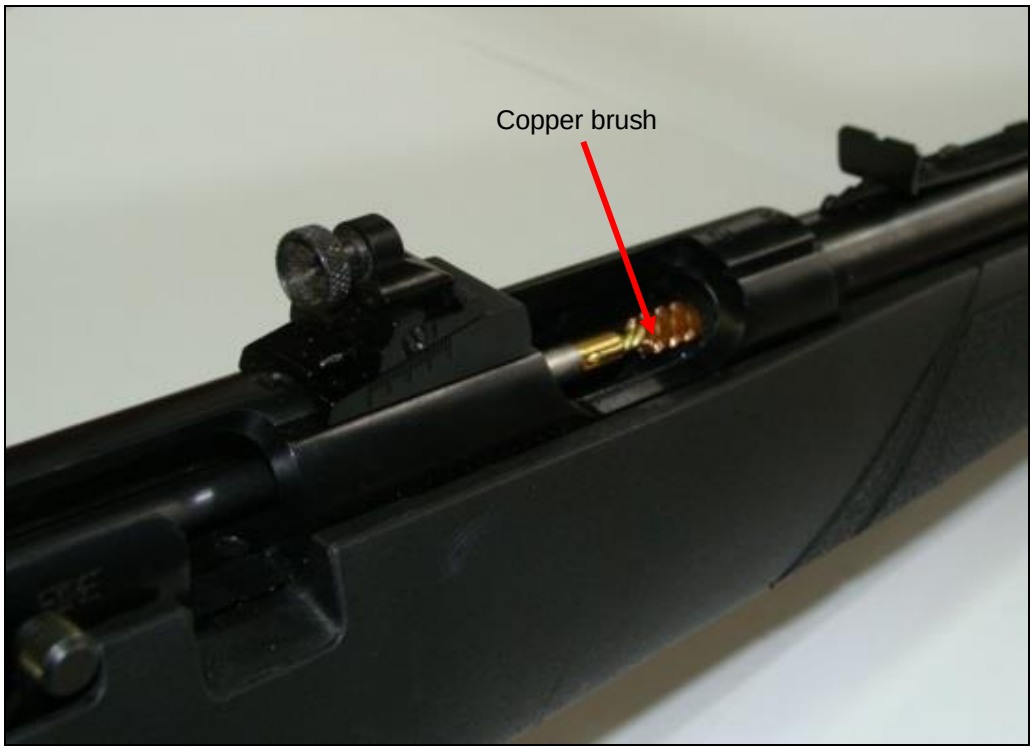


Fig 49 - Use of copper bore brush

b. push lightly oiled 1”x1” patches through the bore from chamber end to muzzle until they come out clean (figs 50 & 51);

Fig 50 - Lightly oiled 1”x1” patch in eyelet

Fig 51 - Use of 1”x1” patches

c. if patches struggle to come out clean after 8 or more patches, repeat steps a & b;

d. push one dry 1”x1” through the bore from chamber end to muzzle to leave a light oil film inside the bore;

e. using a rag, clean the inside of the receiver removing any carbon; and

f. check entire barrel/receiver for cleanliness/corrosion, clean any areas with light oil as this should remove light corrosion.

Caution: Remove brushes/patches at the muzzle end before pulling the rod back through to avoid damage to the crown of the muzzle.

Assembly and Functions Test

2.43 Reassemble the rifle and carry out the functions test as follows:

a. visually check the serial numbers on the bolt and rifle to ensure they match;

b. visually check the chamber is clear and no magazine is fitted;

c. align the two halves of the bolt, matching the ‘W’ cross section shape of the front half with the rear section that exposes the internals of the bolt (fig 52);

Fig 52 - Correct bolt alignment

d. ensure the bolt is in the cocked position (fig 53);

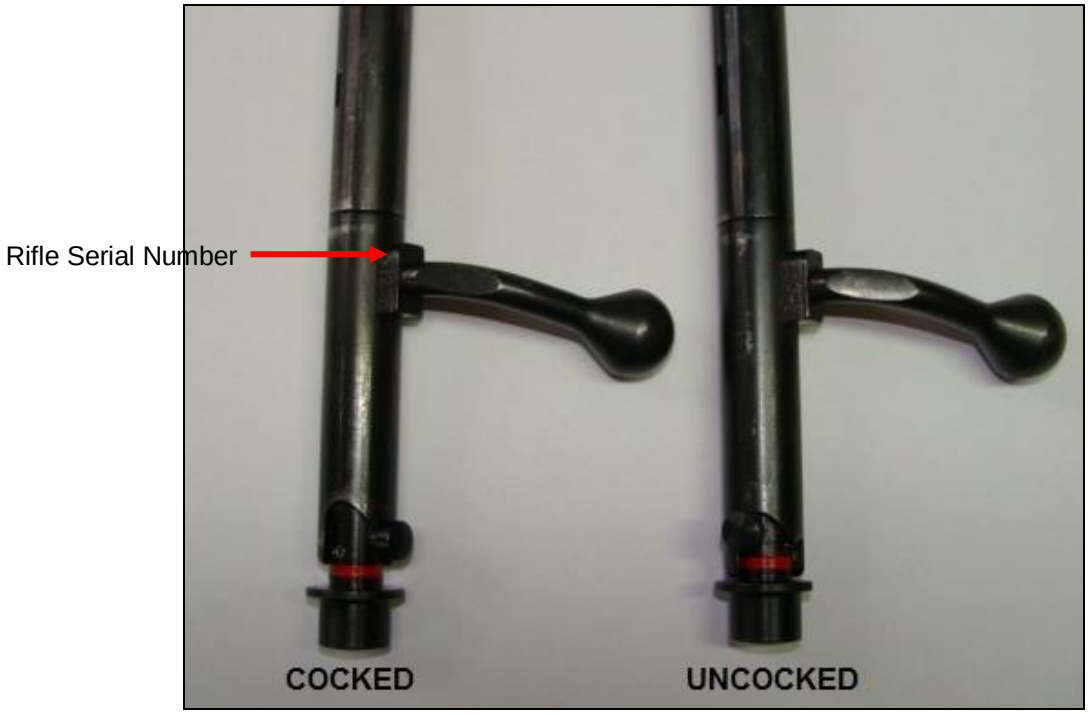


Fig 53 - Bolt in cocked/un-cocked position

e. with the safety catch on 'FIRE' and the trigger pulled and held, push the bolt into the receiver with the 'W' at the bottom, taking care to line up the projection on the left side of the extractor with the slot in the receiver (fig 54) and rotate the bolt handle down to lock the bolt;

Fig 54 - Position of bolt projection

f. attempt to apply the safety catch to Safe, it should **not** engage;

g. open and close the bolt to cock and lock the action;

h. apply the safety catch to Safe, attempt to fire, it should **not** fire;

i. apply the safety catch to fire, squeeze the trigger **without** touching the trigger release, rifle should **not** fire; and

j. open the bolt and place rifle on ground, bolt handle uppermost.

2.44 If the bolt is to remain fitted for a length of time, set safety catch to **fire**, pull and hold trigger whilst closing the bolt, to de-cock the rifle. Set the safety lever rearwards to the **safe** position.

CONFIRM BY PRACTICE

Conclusion

2.45 Confirm by questions to and from the class on entire lesson.

Summary

2.46 To include:

a. the importance of maintaining the rifle in a clean and serviceable condition by regular cleaning and inspection.

LESSON 3 – The States of Rifle Readiness, Care of Ammunition, Filling & Emptying Magazines

INSTRUCTORS NOTES

Objective

2.47 At the end of this lesson the student is to be able to:

a. explain the four states of rifle readiness;

b. explain the care of ammunition; and

c. filling and emptying magazines.

Timings

2.48 Four 40-minute periods.

Method

2.49 A practical instructional lesson in a range scenario is recommended.

Stores

2.50 The following stores are recommended:

a. .22 rifles (1 per student if possible);

b. 2 x magazines per rifle (recommended);

c. ground sheets; and

d. Figure 5A Facings.

CONDUCT OF THE LESSON

Safety Precautions

2.51 Inspect all firearms and magazines.

Revision

2.52 Q & A on the Four Marksmanship Principles.

Note: The Marlin Model-XT is a rim fire rifle and as such is **never** to be fired without a round in the chamber as this can result in damage to the chamber and/or the firing pin (see fig 55 below).

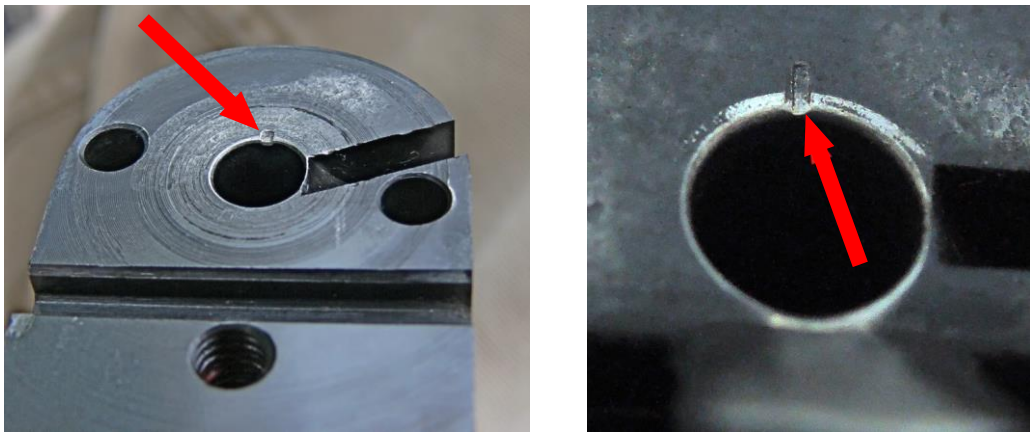


Fig 55 - Damage to chamber caused by firing .22 rifles without a round in the chamber.

Introduction

2.53 It is essential that all range shooting takes place in a safe, controlled environment. To achieve this there are specific drills which firers must carry out on command in order to reach the different states of rifle readiness required on the range.

The States of Rifle Readiness

2.54 On the range rifles are in varying states of readiness. These states of readiness are the load, action, instant and unload. The following is an explanation of each state of rifle readiness:

a. **Load.** The rifle is in the 'load' when there are rounds in the magazine and the magazine is placed in the rifle;

b. **Action.** The rifle is in the 'action' when there a round chambered and the bolt is fully forward and down, the safety catch is applied to **safe** and the rifle is in the **rest** position;

c. **Instant.** The rifle is in the 'instant' when the rifle is in the shoulder and the safety catch is in the fire position; and

d. **Unload.** The rifle is in the 'unload' state when the magazine is removed, the body and chamber are clear of rounds and the bolt is to the rear.

The .22 Rimfire Long Rifle Ammunition

2.55 Ammunition that carries the 'primer' in the rim cavity of the cartridge is called a rimfire round.

2.56 Looking at the below cut-away diagram (fig 56) of a .22 inch rimfire cartridge you will see the rim priming is indicated in **red**. The upper side of the rim is known as the underhead position. In certain circumstances the underhead position can be considered as sensitive as the head of the rim.

2.57 Therefore, if a live round fails to extract because of a dirty chamber or a fault in the extraction system, the cartridge should **NOT** be levered out with a screwdriver or similar object. The procedure at paragraph 2.87 is to be followed.

2.58 If a round misfires **DO NOT** reload it, separate it from the other ammunition and return it to the Area CFTSU.

2.59 The method used in filling the primer cavity does not ensure that the priming composition fills the complete rim. So if the firing pin hits a missed portion of the rim the round will not function. However, the rim/case will be distorted and if it is reloaded and fired again the case could split at the original strike point and allow hot gases to escape from the breach.

2.60 A physical check of .22 rimfire ammunition is quite simple. The points to watch out for are as follows:

a. check the bullet for damage to the body;

b. check that there is not lead smear over the case mouths;

c. check that the bullet is seated square, held by the case crimp and is not loose; and

d. check that the bullet is adequately lubricated.

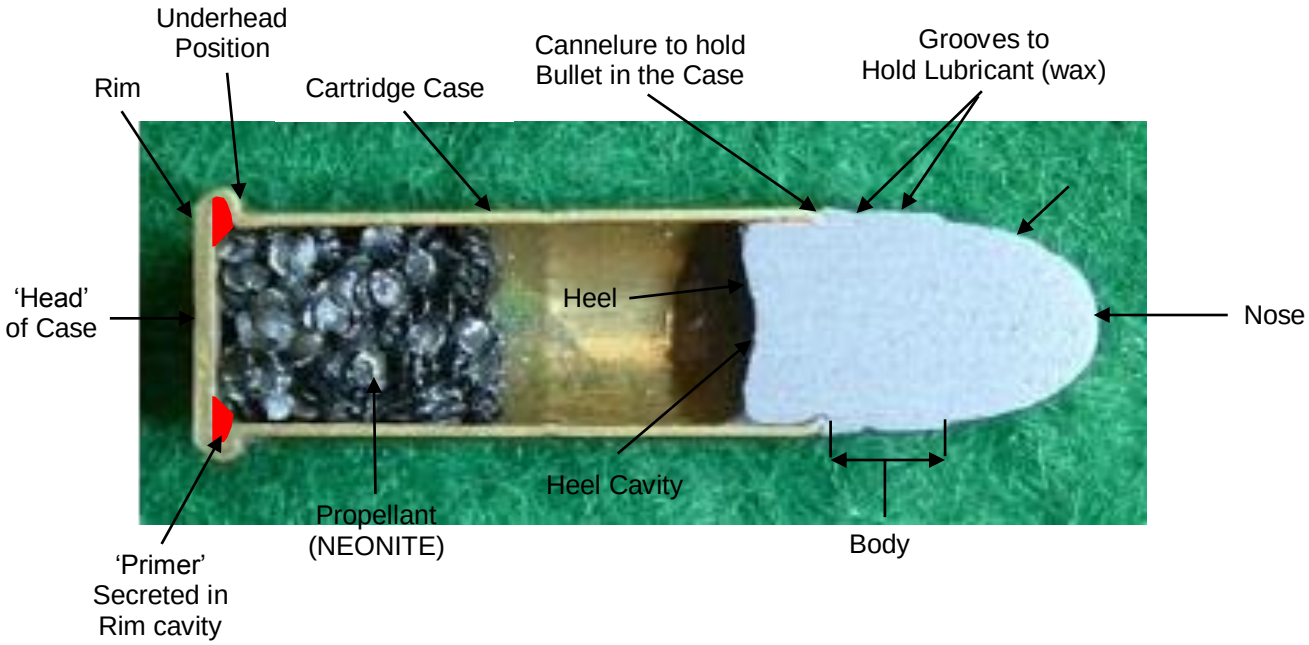


Fig 56 - The .22 Rimfire Long Rifle Cartridge

Care of Ammunition

2.61 Ammunition must be treated with the same care as the rifle, or stoppages may occur. Ammunition must always be kept clean and dry. Use a piece of clean rag to wipe off any excess dirt or moisture before filling the magazines. Never allow the ammunition to lie in the direct rays of the sun; to do so will affect accuracy.

Misfires

2.62 Accidents have occurred as a result of re-firing .22 inch cartridges which have previously misfired. The rim is liable to become damaged during extraction and if the cartridge is reloaded and fired, it may burst and cause injury to the firer. To prevent such accidents, misfired or unfired cartridges which prove difficult to extract should **not** be reloaded but should be set aside and returned to the Area CFTSU for disposal by the Ammunition Technical Officer (ATO).

Filling Magazines

2.63 When tasked as the Ammunition Safety Supervisor during a range shoot it is essential that the magazines be loaded correctly to prevent the mis-feeding of rounds. Magazines are to be loaded as follows; Push each round down onto the magazine platform then slide the rounds under the magazine retaining lips until the round is seated against the rear wall of the magazine.

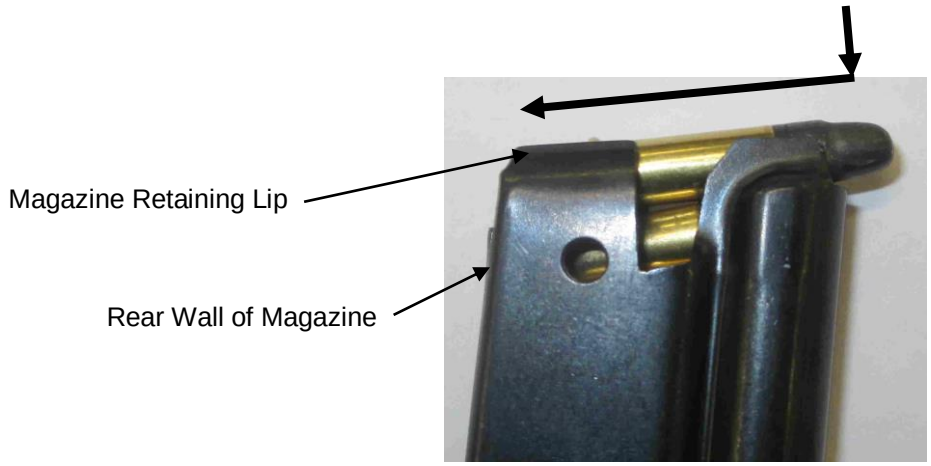


Fig 57 - Loading rounds into magazine

Emptying Magazines

2.64 Magazines should be emptied over a clean and dry surface. Do not allow the rounds to become dirty. To empty the magazines; push down and forward on each round until the magazine is empty. Catch the ejected rounds in the palm of your other hand.

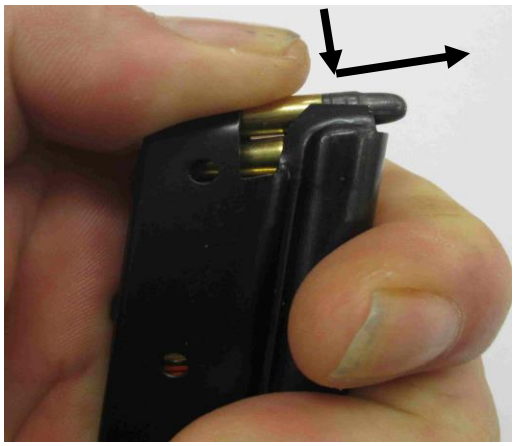


Fig 58 - Emptying magazine of rounds

The Positioning of Rounds in the Magazine

2.65 When the magazine is loaded correctly the top round should be seated in the magazine as shown in fig 59 below.

Fig 59 - Rounds loaded correctly

CONFIRM BY PRACTICE AND QUESTIONS & ANSWERS

Conclusion

2.66 Confirm by questions to and from the class on entire lesson.

Summary

2.67 To include:

a. the importance of having a clean rifle and ammunition.

LESSON 4 – Rifle Handling Drills

INSTRUCTORS NOTES

Objective

2.68 At the end of this lesson the student is to be able to carry out the:

a. load, action, instant and unload the Marlin Model-XT rifle; and

b. immediate action, stop drill, inspection of arms and stoppages.

Timings

2.69 Two 40 minute periods.

Method

2.70 A basic instructional period, indoors and outdoors.

Stores

2.71 The following stores are recommended:

a.	rifle	1
b.	magazines	2
c.	a piece of cleaning rag	each qty

CONDUCT OF THE LESSON

Safety Precautions

2.72 Inspect all firearms and magazines.

Revision

2.73 There is no revision associated with this lesson.

Introduction

2.74 To ensure all shooting takes place in a safe and controlled manner, there are specific drills the firer has to carry out. All commands given by the Range Conducting Officer (RCO) are to be adhered to and cadets are to react to them accordingly. The drills are detailed as follows and are to be carried out in the sequence given.

Load

2.75 When given the command **'LOAD'** the student is to:

a. ensure the bolt is fully to the rear;

b. insert the magazine into the magazine well; and see note 1

c. return the master hand to the small of the butt, finger well clear of the trigger. see note 2

Notes:

1. Do not place the magazine into the magazine well, then **'tap'** and/or **'hit'** it home with the hand. This may cause damage to the magazine well and/or the magazine retaining lip(s).
2. The trigger finger is also to be wrapped around the small of the butt.

Action

2.76 When given the command **'ACTION'** the student is to:

a. push the bolt handle firmly forward and down using the thumb and forefinger of the master hand to cock and lock the action;

b. apply the safety catch to **safe** (rearward); and

c. return the master hand to the small of the butt, finger well clear of the trigger. see note

Note: The trigger finger is also to be wrapped around the small of the butt.

Instant

2.77 When given the command **'INSTANT'** the student is to:

a. raise the rifle into the shoulder, looking **over** the sights; see note 1

b. apply the safety catch to fire (forward); and

c. return the master hand to the small of the butt, finger well clear of the trigger. see note 2

Notes:

1. Looking over the sights is so that the firer can ensure they are **aligned** to the **correct** target.
2. The trigger finger is also to be wrapped around the small of the butt and only placed on the trigger when given the command to fire.

Last Shot

2.78 Depending on the serial, when given the command to engage the target the cadet fires and continues firing until the last round has been expended in the magazine; the firer must then take the rifle out of the aim, keeping the rifle pointing down the range. see note

Note: The rifle is in the 'rest' position with both hands on the rifle maintaining control and direction of the barrel at all times.

Target Failure

2.79 In the event of a target falling off or becoming unusable, the following is to occur:

a. The firer is to apply the safety catch and take the rifle out of the aim, keeping the rifle pointing down the range,

b. The RCO is to allow other firers to complete the serial then give the command to unload, clear all firearms and direct *all* firers to stand clear behind the firing point before a safety supervisor or shooting coach is allowed to move forward to re-affix the target; and

c. Once the target is re-affixed and the safety supervisor or shooting coach has returned back behind the firing line, the RCO is to allow that firer to complete the serial

Unload

2.80 When given the command **'UNLOAD'** the student is to:

a. remove the magazine;

b. open the action, by pulling the bolt fully to the rear;

c. check that the chamber, body and the face of the bolt are clear of rounds; and see note 1

d. return the master hand to the small of the butt. see note 2

Notes:

1. Conduct the 'Three Point Check'.
2. The trigger finger is also to be wrapped around the Small of the Butt.

Inspection of Arms

2.81 Before anyone can move back from or forward of the firing point or before any rifles are taken from the firing point the RCO must be certain that the rifles are clear. To achieve this an inspection of the rifles are carried out. If using Shooting Coaches or Safety Supervisors, then they can inspect the rifles and indicate to the RCO that they are clear.

2.82 When given the command **'FOR INSPECTION - PARALLEL ARMS'** the student must carry out the following:

a. tilt the rifle to the left slightly holding the bolt open with your finger so the bolt does not slide forward; and

b. at the same time hold up the magazine to be inspected. see note

Note: If **more** than two magazines have been used for the serials, then the magazines can be left on the ground in such a manner that they can be seen that they are empty by the safety supervisor, coach or RCO.

2.83 When told the rifle is **'CLEAR'** and receiving a tap on the shoulder, the student must carry out the following:

a. insert the Chamber Safety Device; and

b. lay the rifle down with the bolt handle uppermost.

2.84 When given the command **'STAND CLEAR'** or **'DETAIL RISE'**, the student stands up behind the groundsheet, leaving the rifle on the ground.

2.85 Whilst the firers and/or coaches or safety supervisors are at the targets, **NO** personnel are to be on the firing point or are to touch any of the rifles until everyone is back from the targets. The RCO should remain at the firing point to enforce this.

CONFIRM BY PRACTICE

Immediate Action Drill (IA)

2.86 If the rifle fails to fire, the firer is to carry out the 'Immediate Action' drill. When told **'RIFLE FAILS TO FIRE'** the firer is to:

a. declare 'stoppage' and raise a leg (if in the **prone** position); see note

b. take the rifle out of the shoulder;

c. with the rifle pointed at the target open the bolt; and

d. inspect the chamber, body and magazine.

Note: Raising the leg by the firer (whilst in the prone position) is **ONLY** to indicate to the RCO as to which firer has the stoppage.

Stoppages

2.87 On completion of the IA drill, the cause of the rifle stoppage can be identified. The most common causes will be an empty magazine or an obstruction. The actions to be taken by the firer for each are as follows:

a. **Empty Magazine:**

(1) When told **'You have an empty magazine'** the student is to:

(a) Remove the empty magazine.

(b) Place on a new magazine containing rounds.

(c) Close the bolt and continue firing.

b. **Obstruction:**

(1) When told **'You have an obstruction"** the student is to:

(a) Remove the magazine.

(b) Clear the obstruction.

(c) Replace the magazine into the rifle.

(d) Close the bolt and continue firing.

Note: The cadets have been taught and tested (DFTTs) on how to rectify the above stoppages; when told to 'carry on', the cadets are to carry out the IA and are to clear any subsequent stoppage themselves under the watchful eye of the Shooting Coach or Safety Supervisor. The raising of the leg (whilst in the prone position) is only to indicate to the RCO as to which firer has a stoppage.

Fig 60 - Spent cartridge fails to eject causing an obstruction

CONFIRM BY PRACTICE

Empty Cartridge or a Live Round will not Extract

2.88 In the rear occasion that an empty cartridge or live round becomes stuck in the chamber of the rifle and will not extract, the RCO, Shooting Coach or Safety Supervisor will first ascertain from the firer whether the round has fired or not. Upon ascertaining the state of the rifle, the RCO, Shooting Coach or Safety Supervisor has the following options open to them to rectify the obstruction:

a. **First option:**

(1) Close and open the bolt again to attempt to extract the round. If the cartridge or round still does not extract, conduct the second option.

b. **Second option:**

(1) Remove the bolt from the rifle.

(2) Using the bolt from another rifle, attempt to extract the round, this will generally work.

(3) If the empty cartridge or live round still does not extract, the rifle is to have the bolt removed, the rifle is then to be tagged using the MD777 Unserviceable tag [See note 1] as containing an empty cartridge or live round (as applicable).

(4) Inform the Area Advisor of the situation.

(5) If it is a live round in the chamber, then the rifle is to be taken to the nearest gunsmith for extraction.

2.89 A rifle that contains a live round in the chamber is **NOT** to be secured in the cadet unit firearms storage room or container for any length of time.

Notes:

1. MD777 Unserviceable tags are available through the CFTSU.
2. The live round is **NOT** to be levered out using a screwdriver or any other similar object. This could cause the round to fire resulting in serious injury.
3. **Common sense is to apply.** If in doubt, you are to get in touch with your Area Advisor ASAP for further advice.

Stop Drill

2.90 If at any time the RCO or anyone on the range orders **'STOP'** or **'STOP FIRING'** all firers are to **immediately** carry out the following actions:

a. attempt to apply the safety catch to safe (rear); [see note]

b. lay the rifle on the ground with the bolt handle uppermost keeping hands well clear of the rifle; and

c. await further instructions from the RCO.

Note: If the round **has** been fired and the rifle has **not** been re-cocked, the safety catch **cannot** be applied to safe.

CONFIRM BY PRACTICE

Conclusion

2.91 Confirm by questions to and from the class on entire lesson.

Summary

2.92 To include:

a. the importance of carrying out the drills efficiently and safely; and

b. the importance of immediate compliance to orders on the range.

LESSON 5 – Holding, Aiming and Firing from the Prone Position

INSTRUCTORS NOTES

Objective

2.93 At the end of the period the student is to be able to:

a. hold, aim and fire the Marlin Model-XT in the prone position; and

b. carry out the correct action on receiving the commands 'Stop' and 'Go On'.

Timings

2.94 This lesson will be conducted over three 40 minute periods.

Method

2.95 A basic outdoor instructional period in a range scenario is recommended.

Stores

2.96 The following stores are recommended:

a. for each student and instructor:

(1)	Marlin Model-XT	1
(2)	Magazines	2
(3)	Filled sandbag	1
(4)	Sight picture diagram	1
(5)	Figure 5A facings	1

Preparation

2.97 The following preparations are necessary:

a. place out targets at 25 metres;

b. inspect all sights to ensure that they are in good condition; and

c. place out sandbags for each cadet.

Miscellaneous

2.98 For this lesson, note the following; the cadet can only be taught to shoot properly on a shooting range. However, in this lesson the drill for firing a shot can be taught without the cadet worrying about the effect of shooting, that is - noise and recoil.

CONDUCT OF THE LESSON

Safety Precautions

2.99 Carry out the normal safety precautions.

Revision

2.100 Revise the states of rifle readiness.

Introduction

2.101 A cadet must be capable of firing the rifle accurately and instinctively. You can do this if you understand and apply the Four Marksmanship Principles, which are:

a. **Principle One:** The firers position and hold must be firm enough to support the rifle;

b. **Principle Two:** The rifle is naturally aligned towards the target without any undue effort or strain on the part of the firer;

c. **Principle Three:** The sights of the rifle must be correctly aligned; and

d. **Principle Four:** The shot must be released and followed through with minimum disturbance to the firer's position or the rifles alignment onto the target.

The Prone Position

2.102 The basic shooting position is prone. It gives the best support and is less tiring. On the command 'Detail Down', carry out the following:

a. advance the left foot and lower the body forward onto the hands; then

b. flick the legs to the rear and lower the body to the ground under control;

c. the body should be relaxed and angled slightly to the left with the legs in any comfortable position to suit the ground level and conditions;

d. muscles should be relaxed to avoid any form of tension when releasing the shot;

e. by bringing the upper part of the right leg forward the body weight is rolled slightly to the left and may allow easier breathing;

f. rest the front hand on the support and adjust the position of the left arm and hand so that a good grip and a comfortable position is achieved;

g. the right hand should grip the small of the butt, trigger finger outside the trigger guard; and

h. to stand up, place the right hand on the ground and stand up.

Fig 61 - The prone position – view one

Fig 62 - The prone position – view two

Fig 63 - The prone position – lower body option one

Fig 64 - The prone position – lower body option two

Fig 65 - The prone position – lower body option three

Fig 66 - Tripod formed by arms and ground

Holding in the Prone Position

2.103 ***Explain and Demonstrate.*** Once you have adopted the prone position and received the command 'Instant', carry out the following:

a. lift the rifle and place the butt into the shoulder and apply the safety catch to 'fire';

b. the left elbow should be on the ground behind the cover, with the left hand gripping the fore-end firmly enough to prevent movement of the fore-end on the cover. No attempt should be made to grip tightly or pull back with the left hand as this will cause unnecessary muscle tension;

c. the right hand is the controlling hand and must hold the small of the butt firmly. The web between the forefinger and thumb should be directly behind the cocking piece of the bolt and as near to the top as possible. With this hold, the forefinger should be wrapped around the small of the butt. The grip with the right hand must be firm, pulling the rifle back towards a firm shoulder, without strain;

d. the fleshy part of the cheek (not the cheek bone), should rest against the butt in a position that allows the right eye to look straight through the rear sight aperture without strain. The head should be upright and should be positioned to achieve a clear aim picture; and

e. the position of the elbows will depend on the type and height of the support. However, they should be allowed to rest naturally and not affect the grip of either hand.

CONFIRM BY PRACTICE

Aiming

2.104 ***Explain.*** To be able to fire accurately the firer must ensure the correct aim picture is achieved and maintained.

How to Aim

2.105 ***Explain.*** The firer is to carry out the following:

a. with both eyes open look above the top of the sight. Identify the target and swing the barrel towards it;

b. keeping both eyes open, roughly align the sight on the target;

c. rest the cheek on the butt and locate the target through the sight. Close the eye not in use (with practice both eyes can be left open if desired); and

d. adjust the position of the head until the correct eye relief (distance from the eye to the rear of the sight) is obtained. Having achieved this, take the correct aim on the target as previously taught.

2.106 It is important that the firer keeps the tip of the foresight in sharp focus upon releasing the shot, rather than focusing on the point of aim.

Fig 67 - Eye relief

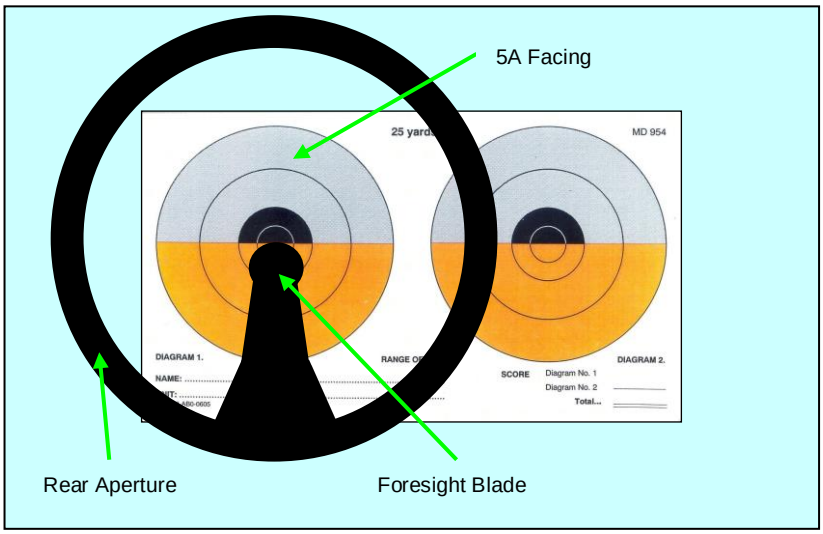


Fig 68 - Sight picture (not to scale)

Testing and Adjusting the Firers Position

2.107 ***Explain and Demonstrate.*** It is essential that the rifle points naturally at the target without any strain on the firer. To achieve this, the firer is to test, and if necessary adjust, their firing position as follows:

a. aim at the target then relax the grip with both hands. The sight should remain on, or very near to the point of aim;

b. if the sight moves completely off the target, an adjustment to the firing position is required;

c. to make the adjustment in the **prone** position:

(1) Keep the front handgrip firmly on the cover and pivot the body slightly to the right or left. This will correct any lateral errors in the aim picture.

(2) To correct errors in elevation move the body forward or back. Keep the butt firmly against the shoulder and do not alter the position of the cheek on the butt.

d. to confirm that the position has been correctly adjusted, lower the butt from the shoulder, close both eyes and bring the rifle back into a comfortable firing position. Open the right eye and check that the sight is on or very close to the point of aim. If the aim is not correct, adjust as taught;

e. To make the adjustment in either the **sitting** or **kneeling** position, the same process is used, however when making a significant change to your body position, conduct the following:

(1) Lay the rifle on the ground facing the target area and make an adjustment by placing your hands on either side of your body (for sitting position) and pivot your body in the desired direction (fig 69 below).

Fig 69 - Making an adjustment to body position

(2) Take up the rifle and ensure your position is aligned to the target.

Fig 70 – Checking / Re-checking alignment

f. with practice it will become natural to adopt a position that will require little or no adjustment but the tests, as taught, should ALWAYS be carried out.

CONFIRM BY PRACTICE

Firing

2.108 ***Explain.*** The final rule of marksmanship is that the shot must be released and followed through without disturbing the firing position or aim.

Firing a Single Shot

2.109 Explain to the cadets the following:

a. if the rifle or the aim is disturbed during the stage when the trigger is pressed, the bullet will not hit the target. Providing that the position is correct with the rifle held firmly and pointing naturally at the target, all that is now required is control of breathing and a smooth operation of the trigger. This will allow the bullet to leave the muzzle without movement of the rifle.

b. breathing is a natural function that will continue without strain until the breathing cycle is disturbed. It is important therefore that the firer controls his or her breathing in a way that does not cause strain. This can be achieved as follows:

(1) Take two deep breaths to oxygenate the blood.

(2) Slightly extend the pause between breathing out and in (lungs partially empty) and

(3) During this pause, fire the shot.

c. during the breathing pause, which should not be longer than six seconds, the firer should perfect the aim and squeeze the trigger without disturbing the aim. The trigger finger should exert slight pressure on the trigger during the breathing phase.

It is important that the action of the trigger finger is carried out without moving or reducing the grip with the master hand; and

d. as soon as the round has been fired, movement of the trigger finger must cease. The firer must remain on aim, looking through the sight and maintaining the position and hold for about one second after the round has been fired. This follow through of the shot will eliminate movement of the rifle, caused by the firer raising the head or relaxing the hold.

CONFIRM BY PRACTICE

Snap Shooting

2.110 ***Explain.*** Firing at targets that show themselves for short periods only, is called 'Snap Shooting'. Snap shooting is similar to deliberate shooting except that the cadet must speed up and fire more quickly. There will be less time for correct breathing control but the rules of marksmanship must be followed as closely as possible.

2.111 ***Explain and Demonstrate.*** The 'Rest Position' is adopted after the command 'Instant' is given and is the position to adopt prior to the command 'Up'.

2.112 After receiving the command 'Instant', the cadet is to bring the rifle into the shoulder and applies the safety catch to 'fire'; once this is done the cadet lowers the rifle out of the shoulder to assume the 'Rest' position. Both hands remain on the rifle with the master hand around the small of the butt with the trigger finger **outside** the trigger guard.

2.113 On receiving the command 'Up' the firer raises the rifle into the shoulder acquires the target through the sights and fires. As soon as the cadet has fired, they are to cock the rifle so as to eject the spent cartridge case and load another round into the chamber then lower the rifle out of the aim and adopt the 'Rest' position. Both hands remain on the rifle with the master hand around the small of the butt with the trigger finger **outside** the trigger guard. This procedure continues until all exposures have been completed.

CONFIRM BY PRACTICE

Conclusion

2.114 Carry out the following:

a. confirm by questions to and from the class on entire lesson;

b. safety precautions; and

c. check and pack any stores.

Summary

2.115 To include the following:

a. the importance of applying the rules of marksmanship to all types of firing; and

b. a forecast of the next lesson in this subject.

LESSON 6 – Firing from Other Positions

INSTRUCTORS NOTES

Important Notes:

1. The following firing positions contained in this lesson are **NOT** to be instructed by unit shooting coaches or range conducting officers until they have completed or attended the update training i.e. after **03 August 2017**, which is conducted on the authorised Shooting Coach course.

2. Firing from the Sitting and Kneeling positions **is to be** instructed dry (rehearsed) on the Marlin Model-XT within 1 week prior to the live firing range practice.

3. Confirmation training, including Dry Firing Training Test assessment is to be conducted at the range prior to live firing.

Objective

2.116 At the end of the period of instruction the cadet is able to:

a. fire the Marlin Model-XT from the sitting and kneeling unsupported positions.

Timings

2.117 This lesson will be conducted over one 40 minute period.

Method

2.118 A basic outdoor instructional period.

Stores

2.119 The following stores are recommended:

a. for each student:

(1) Marlin Model-XT 1

(2) Magazines 2

(3) Groundsheet 1

b. for the instructor:

(1) Marlin Model-XT 1

(2) Magazines 2

(3) Groundsheet 1

(4) Figure 5A facings Qty

Preparation

2.120 Carry out the following preparations:

a. reconnoitre the training area and note realistic locations for targets;

b. position the targets at 25, 50 and 75 mtrs (if at all possible); and

c. lay out the groundsheets with rifles placed on them.

Miscellaneous

2.121 As the positions being used are less stable than the lying position, it is impossible to hold the rifle perfectly still when aiming. An area aim on the target as opposed to a point of aim has to be accepted. The size of the area aim (and subsequent enlarged group size when live firing) will depend on the stability of the position being used and time available to fire the shot. The group size will eventually decrease as the cadet's shooting muscles develop and his/her reflex actions speed up.

CONDUCT OF THE LESSON

Safety Precautions

2.122 Carry out safety precautions as normal.

Revision

2.123 Q & A and practical revision on holding, aiming and firing in the prone position.

Introduction

2.124 ***Explain.*** The positions taught here are useful not only on the rifle range during a cadet unit range practice, but can also be used when out in the field during hunting trips. However, these positions may not be used on most indoor ranges as the ranges may not be designed for these firing positions. However, most military outdoor ranges are designed for these firing positions at specific distances. The RCO **is to read** the appropriate Range Standing Orders for the range being used.

Sitting Position

2.125 ***Explain and Demonstrate.*** The sitting position is useful when firing from a forward slope, in low scrub or at moving targets at shorter ranges. To adopt the sitting position carry out the following:

a. sit with the legs either crossed or apart and place the feet in a comfortable position. The body should face slightly to the right of the line of fire. The rifle is held as in the kneeling position;

b. on the command ‘Action’ carry out the actions previously taught; and

c. on the command ‘Instant’, adopt the alert position and move the safety catch to ‘Fire’. Place the elbows just in front of or on the inside of the knees.

Fig 71 - Sitting unsupported - position one (ideal for forward slope)

Fig 72 - Sitting unsupported - position two (ideal for flat ground)

CONFIRM BY PRACTICE

Kneeling Position

2.126 ***Explain and Demonstrate.*** This position can be adopted quickly from the standing position. It permits more accurate shooting than is possible from the standing unsupported position and can be used for firing around or over cover. To adopt the kneeling position carry out the following:

a. face half right to the line of fire. Kneel on the right knee, keeping it well out to the right and, if possible, sit on the heel or the side of the foot. Rest the left forearm on the left knee with the butt in the right thigh;

b. on the command 'Action' carry out the actions previously taught;

c. on the command 'Instant', adopt the alert position and move the safety catch to 'Fire'. The left hand can be used to assist positioning the butt in the shoulder. Support the left elbow behind the knee. Turn the left foot inwards to lock the lower part of the leg and to reduce movement. Keep the weight of the body back over the right heel; and

d. the sequence and drills for firing the shot are as taught for the prone position.

Fig 73 - Kneeling unsupported position – method one

Fig 74 - Foot placement for kneeling unsupported - method one

Fig 75 - Kneeling unsupported position - method two

Fig 76 - Foot placement for kneeling unsupported - method two

CONFIRM BY PRACTICE

Conclusion

2.127 Conclude the lesson as follows:

a. questions from the students on the entire period;

b. confirm by questions and practice as time permits;

c. carry out safety precautions; and

d. check and pack kit.

Summary

2.128 To include:

a. irrespective of the position adopted, the four rules of marksmanship are to be applied;

b. a change of position can effect accuracy. The cadet is taught how to overcome this during live firing lessons / practices

c. a forecast of the next lesson in this subject.

ANNEX A – Dry Firing Training Test (DFTT) Assessment Sheet

Notes:

1. After Serials 1 – 4 have been completed, the Assessor then has the choice to assess the cadet in **one** of the following positions; Prone, Sitting or Kneeling.
2. Serials 1 – 4 can be carried out with the Cadet kneeling down for ease and comfort. The remainder of the rifle handling drills are to be performed in the position as indicated by the Assessor.
3. All actions that are marked with an **astrix (*)** are deemed to affect safety and will constitute an automatic **"FAIL"**.
4. The **'Safe Direction'** is to be indicated to all the Cadets during the assessment brief which is to be delivered by the Assessor prior to the start of the assessment.

	Surname						
	Position	**Prone**	**Sitting**	**Kneeling**	**Prone**	**Sitting**	**Kneeling**
1.	**Order** ***"Carry Out Safety Precautions"*** **(Rifle to have Magazine Fitted & Bolt Closed)**						
*	Take up the rifle and point the rifle in a Safe Direction	P			P		
*	Remove the Magazine	P			P		
*	Ensure the bolt is fully to the rear	P			P		
*	check that the chamber, body and the face of the bolt are clear of rounds (three point check)	P			P		
2.	**Order** ***"Hand over the Rifle"***						
*	Ensure the bolt is fully to the rear	P			P		
*	Inspect the chamber, breech & body and ensure no magazine is fitted (three point check)	P			P		
*	Show the other person the chamber, body and the face of the bolt are clear of rounds (three point check)	P			P		
	Hand over the rifle	P			P		
	Use A Different Rifle For Serials 3 – 20 Below						
3.	**Order** ***"Strip the Rifle"*** **(Rifle to have the Magazine fitted & Bolt Open)**						
*	Carry out Safety Precautions	P			P		

	Whilst squeezing the trigger, pull the bolt fully to the rear and out of the rifle	P			P		
4.	**Order** ***"Assemble the Rifle & Carry Out the Functions Test"***						
*	Check serial numbers match on bolt and rifle	P			P		
	Ensure the "W" cut aligns with the rear half of the bolt	P			P		
	While squeezing the trigger, insert bolt and rotate to the right and down to lock the action	P			P		
*	Attempt to apply the safety catch, it should not engage	P			P		
	Open and close the bolt to cock and lock the action	P			P		
*	Apply safety catch to safe, attempt to fire, it should not fire	P			P		
*	Apply the safety catch to fire, squeeze the trigger without touching the trigger release, rifle should not fire	P			P		
	Open bolt and place rifle on the ground, bolt handle uppermost	P			P		
5.	**Order** ***"Adopt the ..... Position"*** **(Indicate what position the Cadet is to adopt)**						
6.	**Order** ***"Load"***						
	Ensure the bolt is fully to the rear	P	S	K	P	S	K
	Place the magazine into the magazine housing	P	S	K	P	S	K
*	Return the master hand to the small of the butt, trigger finger well clear of the trigger	P	S	K	P	S	K
7.	**Order** ***"Action"***						
	Push the bolt handle firmly forward and down using the thumb and forefinger of the master hand to lock the action	P	S	K	P	S	K
*	Apply the safety catch to safe	P	S	K	P	S	K
*	Return the master hand to the small of the butt, keeping the trigger finger out of the trigger guard	P	S	K	P	S	K
8.	**Order** ***"Fire 5 Rounds at your Left aiming mark followed by 5 rounds at your Right aiming mark"*** **(Cadet to be given two magazines)**						
9.	**Order** ***"Instant"***						
	Raise the rifle into the shoulder, looking over the sights	P	S	K	P	S	K
	Apply the safety catch to fire	P	S	K	P	S	K
*	Return the master hand to the small of the butt, keeping the trigger finger out of the trigger guard	P	S	K	P	S	K
10.	**Order** ***"At your Target in front, Fire"*** **(After the 5th round carry out Serial 11)**						
11.	**Order** ***"Rifle Fails to Fire"***						
*	Declare **'stoppage'** and raise a leg	P	S	K	P	S	K
	Take the rifle out of the shoulder	P	S	K	P	S	K
	With the rifle pointed at the target open the bolt	P	S	K	P	S	K

	Inspect the chamber, breech and magazine	P	S	K	P	S	K

12.	**Order** ***"You have an Empty Magazine"*** **(Remedy Stoppages – Empty Magazine)**						
	Remove the empty magazine	P	S	K	P	S	K
	Place on a new magazine containing rounds	P	S	K	P	S	K
	Close the bolt and continue firing	P	S	K	P	S	K
13	**Order** ***"Rifle Fails to Fire"*** **(IA Drill)**						
*	Declare **'stoppage'** and raise a leg	P	S	K	P	S	K
	Take the rifle out of the shoulder	P	S	K	P	S	K
	With the rifle pointed at the target open the bolt	P	S	K	P	S	K
*	Inspect the chamber, breech and magazine	P	S	K	P	S	K
14.	**Order** ***"You have an Obstruction"*** **(Remedy Stoppages – Obstruction)**						
*	Remove the magazine	P	S	K	P	S	K
*	Clear the obstruction	P	S	K	P	S	K
	Replace the magazine into the rifle	P	S	K	P	S	K
	Close the bolt and continue firing	P	S	K	P	S	K
15.	**Order** ***"Stop"*** **(Ordered whilst firing the Second Magazine)**						
	Attempt to apply the safety catch to safe	P	S	K	P	S	K
*	Lay the rifle on the ground with the bolt handle uppermost, keeping hands well clear of the rifle	P	S	K	P	S	K
	Await instructions from the RCO	P	S	K	P	S	K
16.	**Order** ***"Take up the Rifle and Carry On"*** **(Firer continues firing their 5 rounds)**						
17.	**Order** ***"Unload"***						
*	Remove the magazine	P	S	K	P	S	K
	Open the action, by pulling the bolt fully to the rear	P	S	K	P	S	K
*	check that the chamber, body and the face of the bolt are clear of rounds (three point check)	P	S	K	P	S	K
*	Return the master hand to the small of the butt	P	S	K	P	S	K
18.	**Order** ***"For Inspection – Parallel Arms"***						
	Tilt the rifle to the left slightly holding the bolt open with your finger so the bolt does not slide forward	P	S	K	P	S	K
	At the same time hold up the magazine(s) to be inspected	P	S	K	P	S	K
20.	**Order** ***"Clear"***						
*	Insert the Chamber Safety Device	P	S	K	P	S	K
	Lay the rifle down with bolt handle upper most	P	S	K	P	S	K

PART 3 – Shooting Specific Lessons

Section 1 – Contents

Section 2 – Introduction and Lesson Detail

Introduction

3.1 Part 3 of this publication provides the shooting specific lesson prescriptions required to produce a firer capable of producing at least the minimum acceptable standards and scores laid down throughout this publication. The lessons would usually be inserted into the training programme building up to the commencement of range activity.

3.2 The lesson prescriptions are in outline only to require completion by trainers and coaches to develop the depth of knowledge and familiarity with the base document necessary to provide the required quality of information. The format adopted will standardise small arms shooting training and is aimed at producing a Basic Level of Competency within corps employment context, a soldier who is capable of entering a programme of advance or mission specific training and effectively capitalising on this sound base. The programme may be modified as necessary for groups entering training with prior knowledge and where the formal programme of revision is required, this too is adjusted by training staff to suit the audience. Experience has shown that the time required to conduct revision / reinforcement training satisfactorily is usually 1-2 periods of instruction but should not exceed 4 periods. Most units will be able to conduct this on the range immediately prior to commencing the live firing programme.

3.3 The formal, progressive lessons should be used in conjunction with the safety and handling lessons recommended by the appropriate firearm publications and included in the training syllabus in preparation for range work. In the example of recruit or other initial training they would be ideally inserted as shown below:

a. introduction, rifle specific safety, stripping and cleaning, preparing the rifle for firing;

b. basic handling skills, loading unloading and stoppage drills;

c. aiming, holding and firing from the prone unsupported position;

d. in the event of a target failure, before anyone is allowed to move forward of the firing point to re-affix their target;

e. aiming, holding and firing from other positions;

f. **shooting specific lessons in accordance with this publication;**

g. Dry Firing Training Tests (DFTTs); and

h. range shooting.

3.4 It should be noted by all trainers that the role of instinctive reaction to commands and rifle status variations is a key to achieving the levels of efficiency and effectiveness necessary to prepare firers for competition shooting. Shortcutting standards in rifle handling should not be accepted at any stage of training.

Section 3 – Lesson Summaries

No.	Name	Conditions / Standards	Key Teaching Points	Remarks
1	Introduction to Range Discipline & Procedures.	**Performance / Conditions:** Classroom lecture and range induction. Demonstrate an understanding of range procedure and take part in an indoor or outdoor range practice. **Standards:** Attend lecture and participate in a tutorial, live firing range activity which includes all teaching points.	1. Range layout (indoor and outdoor ranges). 2. Range Briefings. 3. Safety Precautions, Rifle and Personal Discipline. 4. Ammunition Point Discipline. 5. Role of Shooting Coach and Safety Supervisor. 6. Firer Responsibilities during: a. Individual condition; and b. Coached condition.	NZCF 151, Firearms Training Manual, Part 5. Range Standing Orders.
2	Explain Small Arms Terms.	**Performance / Conditions:** Classroom lecture. Demonstrate an understanding of Small Arms and Ballistic Terms. **Standards:** Written test mark of 75% required.	1. Components of the .22 round. 2. Factors affecting the projectile. 3. Factors affecting the rifle. 4. Terms used in small arms.	NZCF 151, Firearms Training Manual, Part 6, Section 2.
3	Demonstrate the Marksmanship Principles.	**Performance / Conditions:** Practical Instruction, two periods at relevant programme times. Marlin Model-XT: Based first on prone then sitting and kneeling. Unsupported and supported firing positions.	1. First Principle. 2. Second Principle. 3. Third Principle. 4. Fourth Principle.	NZCF 151, Firearms Training Manual, Part 6, Section 6.

		Standards: Correctly name the principles and demonstrate recommended holding, aiming and firing techniques.		

No.	Name	Conditions / Standards	Key Teaching Points	Remarks
4	Utilise Grouping Information.	**Performance / Conditions:** Classroom lecture of two periods. **Standards:** Explain the key terms and associated processes the firer should have knowledge and understanding of, that are used in grouping. A written test mark of 75% required. **Note:** Instruction may be completed during PRP One and test conducted after the event or practically during process.	1. Role of Grouping. 2. Theory of the Group. 3. Deleting Rounds from the Group. 4. Extreme Spread (ES). 5. Grouping Capacity (GC). 6. Mean Point of Impact (MPI). 7. Define Zero and Permissible Variation (PV). 8. Mechanics of Zeroing.	NZCF 151, Firearms Training Manual, Part 6, Section 7.
5	Employ Application of Fire Techniques.	**Performance / Conditions:** A classroom lecture of two periods and participation in range activity. Relevant targetry and training aids required. **Standards:** Students able to describe mechanics and adjustment rules of each category. **Note:** Each category should be practically reinforced in detail, elementary prior to PRP One / Two.	1. Define Application of Fire. 2. Valuing of Sighters. 3. Elementary Application of Fire.	NZCF 151, Firearms Training Manual, Part 6, Section 10.

No.	Name	Conditions / Standards	Key Teaching Points	Remarks
6	Prepare to Participate in Range Work, Qualification or Annual Firearms Qualification.	**Performance / Conditions:** Participate in a Programme in Preparation for Range Work. Setting and duration appropriate to audience. This is revisionary and prepares cadets to participate effectively in qualification of Annual Firearms Qualification activity. A range environment with simulated results is an effective scenario. Groups of common standard will produce the best range outcome. Principles of marksmanship can be prelude to each detail first firing occasion. Maximum qualified / competent coaching required. Duration should not exceed 4 hours. **Standards:** Demonstrate the ability to: • Employ the marksmanship principles • Utilise grouping information • Apply fire	1. Utilise grouping information. 2. Apply fire.	NZCF 151, Firearms Training Manual, Parts 4 & 5.

Lesson One – Introduction to Range Discipline & Procedures

Performance Statement

Demonstrate an understanding of range discipline and procedures and take part in an indoor or outdoor range practice.

Range of Variables

1. **Suggested Instructional Method:** Instructor delivered.

2. **Time Frame:** 40 minutes.

3. **Instructional Setting:** Lecture room / Outdoor area / Range.

4. **Equipment:** Applicable Presentation Aids.

5. **Staff Support:** Nil.

6. **Reference(s):**

    a. NZCF 151, Firearms Training Manual, Part 5;

    b. Aide Memoire; and

    c. Applicable Range Standing Orders.

7. **Environment:**

    a. in a suitable lecture room environment by day or night; or

    b. in a suitable outdoor training environment by day; or

    c. an indoor or outdoor gazetted range by day.

Assessment Criteria

8. Attainment of this training objective is confirmed if the student can:

    a. at the end of this lesson gain 75% or more in a written test on:

        (1) Range layout for Indoor or Outdoor range.

        (2) Contents and meaning of Range Briefing main points.

        (3) Safety Precautions, rifle and personal discipline.

        (4) Ammunition point protocols.

        (5) Firer responsibilities during:

            (a) Coached condition; and

(b) Individual condition.

Remarks

9. **Associated Lessons:** Nil.

10. **Planning notes:** Nil.

11. **Revision:** Nil.

12. **Teaching Points:**

a. Range Layout - Descriptions and explanation;

b. Range Briefing - Contents and explanation;

c. Safety Precautions - Rifle and personal discipline;

d. Ammunition Point Discipline;

e. Role of the Shooting Coach and Safety Supervisor; and

f. Firer responsibilities during Individual and Coached conditions.

Assessment / Closure

13. Administer test, advise marking protocol.

14. Encourage students to excel and contribute to the success of every range practice.

15. Reinforce importance of key points, introduce following lesson: **"Explain Small Arms Terms"**

Lesson Two – Explain Small Arms Terms

Performance Statement

Demonstrate an understanding of Small Arms and ballistic Terms.

Range of variables

1. **Suggested Instructional Method:** Instructor delivered.
2. **Time Frame:** 40 minutes.
3. **Instructional Setting:** Lecture room / Outdoor area.
4. **Equipment:** Applicable Presentation Aids.
5. **Staff Support:** Nil.
6. **Reference(s):** NZCF 151, Firearms Training Manual, Part 6.
7. **Environment:**
    a. in a suitable indoors lecture room environment by day or night; or
    b. in a suitable outdoor training environment by day.

Assessment Criteria

8. Attainment of this training objective is confirmed if the student can:
    a. at the end of this lesson gain 75% or more in a written test on the:
        (1) Components of a round of ammunition.
        (2) Factors affecting the projectile.
        (3) Factors affecting the rifle.
        (4) Terms used in small arms training.

Remarks

9. **Associated Lessons:** Nil.
10. **Planning Notes:** Nil.
11. **Revision:**
    a. Range discipline and procedures.
12. **Teaching Points:**

a. Firing a round;

b. Rifling;

c. Jump;

d. Recoil;

e. Theory of Small Arms Fire:

(1) Trajectory.

(2) Culminating Point.

(3) Line of Sight and Departure.

(4) Point of Impact.

Assessment / Closure

13. Administer test, advise marking protocol.

14. Endorse the value of a thorough understanding of all instruction, encourage students to excel.

15. Reinforce importance of key points, introduce following lesson: **"Demonstrate the Marksmanship Principles"**

Lesson Three – The Marksmanship Principles

Performance Statement

Explain and Demonstrate Marksmanship principles

Range of variables

1. **Suggested Instructional Method:** Instructor delivered.
2. **Time Frame:** 40 minutes.
3. **Instructional Setting:** Lecture Room / Range.
4. **Equipment:**
    a. Applicable Presentation Aids;
    b. Marlin Model-XT complete with 2 x magazines per rifle; and
    c. Targetry.
5. **Staff Support:** One Instructor to assist with demonstrations.
6. **Reference(s):** NZCF 151, Firearms Training Manual, Part 6.
7. **Environment:**
    a. Lecture room by day or night; or
    b. Range / Outdoor open environment by day.

Assessment Criteria

8. Attainment of this training objective is confirmed when the student can:
    a. At the end of this lesson gain 75% or more in a written test on the Marksmanship Principles; and
    b. Qualify on a range practice by practically applying the Marksmanship Principles with assistance from a **qualified** Shooting Coach.

Remarks

9. **Associated Lessons:** Nil.
10. **Planning notes:** Nil.
11. **Revision:** Theory of Small Arms Fire.
12. **Teaching Points:**

a. Marksmanship Principles;

b. Marksmanship Principles from the following positions:

(1) Prone position.

(2) Kneeling position.

(3) Sitting position.

Assessment / Closure

13. Administer written test, explain practical range assessment.

14. Endorse the value of a thorough understanding of all instruction, encourage students to excel.

15. Reinforce importance of key points, introduce following lesson: **"Utilise Grouping Information"**

Lesson Four – Utilise Grouping Information

Performance Statement

Demonstrate an Understanding of the utilisation of Grouping Information.

Range of variables

1. **Suggested Instructional Method:** Instructor delivered.
2. **Time Frame:** 2 x 40 minute periods.
3. **Instructional Setting:** Lecture Room / Area.
4. **Equipment:** Applicable Presentation Aids.
5. **Staff Support:** Nil.
6. **Reference(s):** NZCF 151, Firearms Training Manual, Part 6.
7. **Environment:**
    a. In a suitable indoors lecture room environment by day or night; or
    b. In a suitable outdoor training environment by day.

Assessment Criteria

8. Attainment of this training objective is confirmed if the student can:
    a. At the end of this lesson gain 75% or more in a written test on the utilisation of grouping information.

Remarks

9. **Associated Lesson:** Lesson Two – Explain Small Arms Terms.
10. **Planning notes:** Nil.
11. **Revision:**
    a. Small Arms Terms; and
    b. Marksmanship Principles.
12. **Teaching Points:**
    a. Roles of grouping;
    b. Rounds in a group;
    c. Deletion of rounds;

d. Extreme spread;

e. Grouping capacity;

f. Mean point of impact; and

g. Interpret group patterns.

Assessment / Closure

13. Administer test, advise marking protocol.

14. Endorse the value of a thorough understanding of all instruction, encourage students to excel.

15. Reinforce importance of key points, introduce following lesson: **“Employment of Application of Fire Techniques”**

Lesson Five – The Elementary Application of Fire

Performance Statement

Demonstrate an Understanding of the Techniques of Application of Fire.

Range of Variables

1. **Suggested Instructional Method:** Instructor delivered.

2. **Time Frame:** 2 x 40 minute periods.

3. **Instructional Setting:** Lecture Room / Area.

4. **Equipment:** Applicable Presentation Aids.

5. **Staff Support:** Nil.

6. **Reference(s):** NZCF 151, Firearms Training Manual, Part 6.

7. **Environment:** In a suitable indoors lecture room environment by day or night.

Assessment Criteria

8. Attainment of this training objective is confirmed if the student can:

    a. At the end of this lesson gain 75% or more in a written test on the valuing of sighter shots and the mechanics of the techniques of the Application of Fire.

Remarks

9. **Associated Lessons:** Lesson Four – Utilising Grouping Information.

10. **Planning notes:** Nil.

11. **Revision:** Utilising Grouping Information.

12. **Teaching Points:**

    a. Valuing Sighter Shots; and

    b. The Elementary Application of Fire.

Assessment / Closure

13. Administer test, advise marking protocol.

14. Endorse the value of a thorough understanding of all instruction, encourage students to excel.

15. Reinforce importance of key points, introduce following lesson: **“Employment of Application of Fire Techniques”**

Lesson Six – Preparation for Range Work

Performance Statement

Participate in a Programme in Preparation for Live Firing Activities.

Range of Variable

1. **Suggested Instructional Method:** Instructor delivered.

2. **Time Frame:** 40 – 120 minute periods.

3. **Instructional Setting:** Lecture room.

4. **Equipment:** Applicable Presentation Aids.

5. **Staff Support:** Nil.

6. **Reference(s):** NZCF 151, Firearms Training Manual, Parts 4 & 5.

7. **Environmental Conditions:** By day or night.

8. **Range of Methods and Situations:** Adjusted to cater for audience standard.

Assessment Criteria

9. Attainment of this training objective is confirmed during following range work, the student can:

   a. Competently employ the marksmanship principles;

   b. Utilise relevant grouping information; and

   c. Effectively apply fire.

Remarks

10. **Associated Lessons:**

   a. Lesson Three – The Marksmanship Principles;

   b. Lesson Four – Utilise Grouping Information; and

   c. Lesson Five – The Application of Fire.

11. **Planning notes:** The standards for this lesson are achieved practically on the range. The value of conducting as much of this preparatory programme as possible on the Mobile Weapons Training System (MWTS) is endorsed.

12. **Revision:** Use of the Cadet Shooting of Record Book.

13. **Teaching Points:**

a. Practice in Marksmanship Principles in all positions relevant to programme;

b. Utilising following grouping information – ES / GC / MPI / Zeroing; and

c. Value sighters, apply techniques of application of fire.

Assessment / Closure

14. Assessment of this instruction will occur during the following range activity and trainers should take the opportunity to evaluate time and resourcing allocated against the performance of the firers on the range and adjust for future planning accordingly.

15. The desirable outcome of this revisionary activity is a high proportion of strong individual performances. Participants should be given every opportunity to seek further support as required.

16. Encourage participants to excel, to be the best that they can be. Encourage competition within groupings.

PART 4 – Cadet Shooting Syllabus

SECTION 1 – Progressive and Qualification Range Practices

Background

4.1 Shooting for cadets is one of the most popular activities and the single defining activity that separates NZCF from other youth organisations in New Zealand in which shooting, i.e. firearms safety training and target shooting, is part of the NZCF training curriculum.

Range Practices

4.2 Range practices are an important phase of a cadet's training. It is designed to produce a cadet confident in their ability to safely and effectively use the firearm as an individual, react competently to the commands given by the range conducting officer and take their place as an effective member of a cadet unit shooting team. The number and frequency of practices that a cadet will fire each year varies.

4.3 Qualification practices provide a regular opportunity to test, maintain and improve the cadet's technical skill with the rifle and to rate proficiency in all associated skills.

4.4 Progressive training takes the cadet to the required skill level in identifiable stages but based always on the premise that grouping ability is the very essence, the common ingredient of all effective shooting. Understanding, accepting and espousing the role of grouping, as the essence of good shooting is an essential ingredient of the effective shooting coach.

Training and Firing Sequence

4.5 The Progressive and Qualification matches detailed in this part are the basis of shooting progression and annual testing to the benchmark standard for entry into directed or advanced training. The matches can also be utilised as additional training activities at any time.

4.6 When planning and designing training, an acceptable alternative to adopting the preliminary training recommendations made at the various progression model diagrams is to 'teach the test'. This involves conducting the qualification level practice, analysing training deficiencies from the scoring profiles and carrying out specific remedial training.

4.7 This progression and frequency of firing is essential for preparing cadets for marksmanship qualification. It is also essential if preparing the firer for any competition shoots.

4.8 The Progressive Range Practices listed below are only to be fired by cadets in the order laid out. They are set as progression practices, each practice must be passed before they can progress onto the next.

Safety

4.9 **Dry Firing Training Tests (DFTTs).** It is **mandatory** for all firers to have completed the DFTTs assessment prior to the live firing of a rifle, in order to ensure a minimum standard of safety. RCOs **must** confirm that all cadets that are firing have completed and **passed** the relevant DFTTs assessment.

Dress

4.10 Dress for all shooting practices is DPM or Corps equivalent with sleeves rolled down.

Miscellaneous

4.11 The term **'Supported'** means that the rifle's weight may be supported by the firers forearm resting on a sand bag or similar support. It is there to aid the firer so they can concentrate on mastering aiming and trigger control. The term **'Unsupported'** means that the above mentioned (or any other) rests may **not** be used to support the rifle. However, the use of a single point sling is allowed.

Targetry

4.12 All shooting is carried out at 25, 50 and 75 metres. The targetry that should be utilised is illustrated below. This is to help identify correct targets for specific progressive range practices.

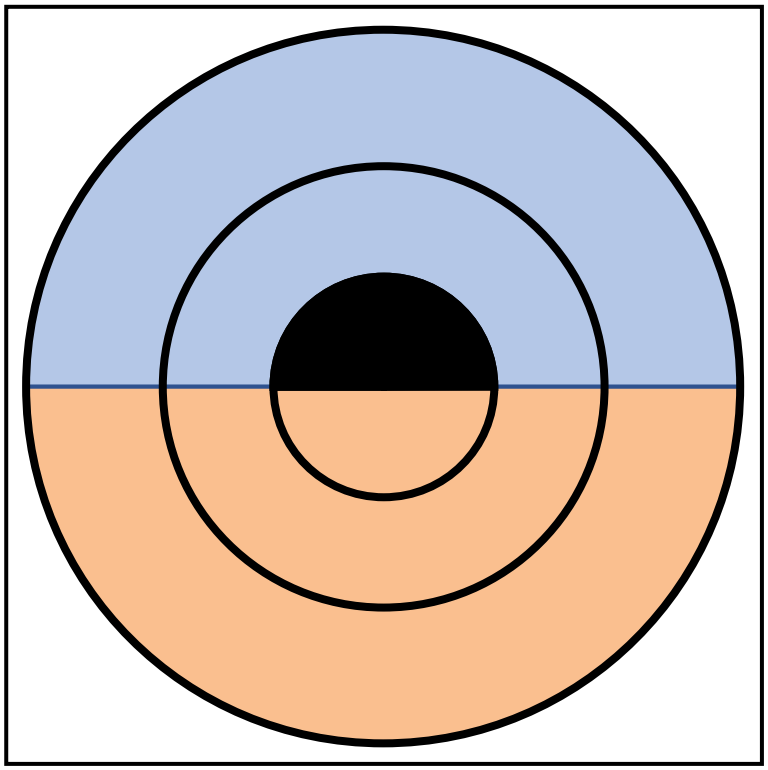


Fig 77 - No. 29 Target

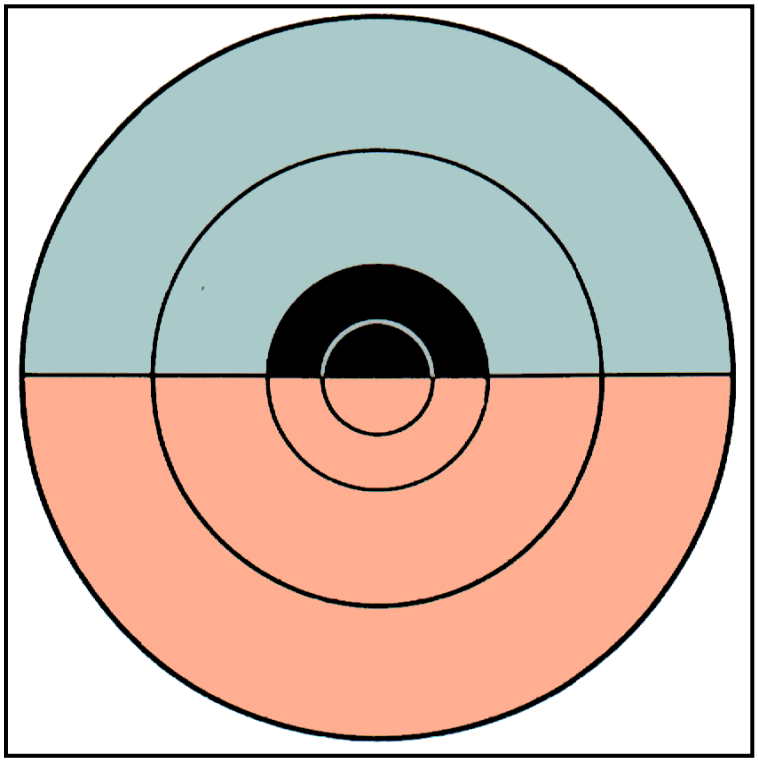


Fig 78 - 5A Facing (Single)

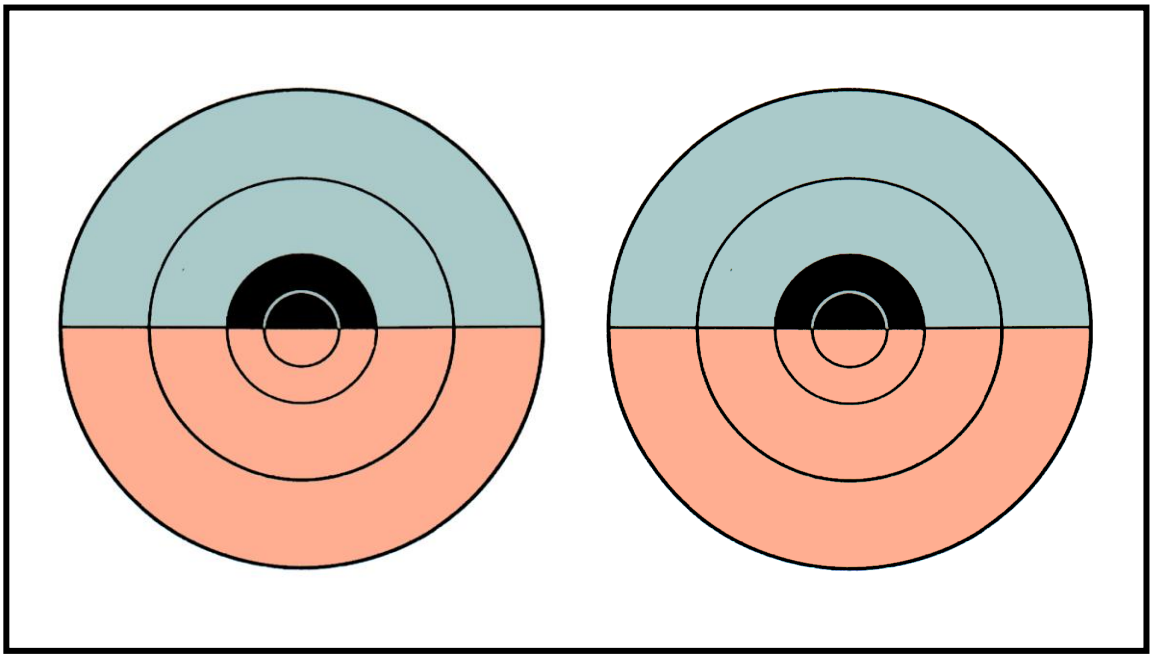
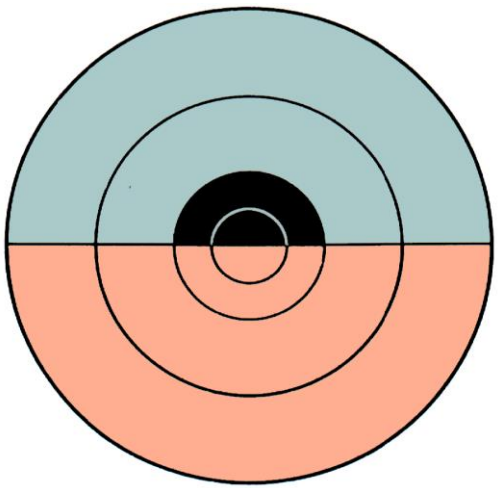
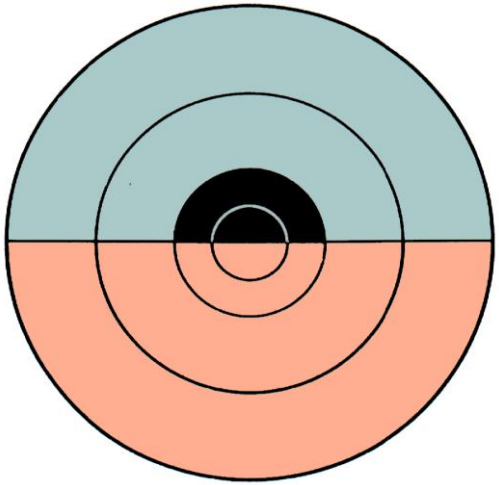


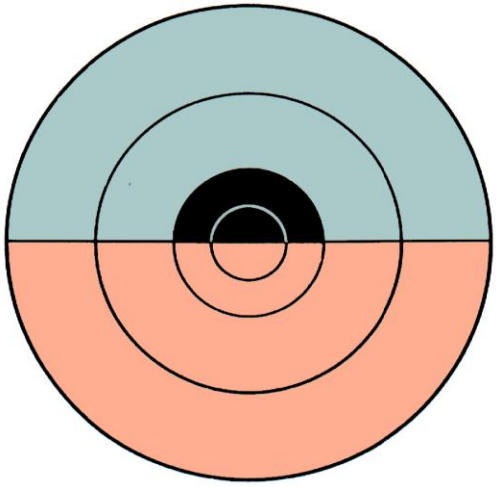
Fig 79 - 5A Facing (Double)

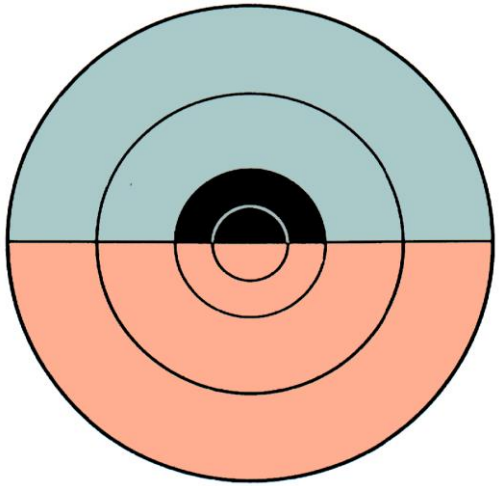
Firers' Name: _____

GROUPING TARGET









Firer's GC: _____

Group 1 ES: _____

Group 2 ES: _____

Group 1 ES: _____

Group 1 ES: _____

Fig 80 - Grouping Target (A3 size)

Marlin Model-XT: Progressive Range Practice One (PRP 1)

Grouping

Ser	Range	Practice	Target	Position	Time	Rounds	Mags	Remarks
RCO:	***"Detail Down, adopt the Prone Supported position. Test & Adjust. LOAD, ACTION - Five rounds into the Stop Bank - INSTANT……Fire"***							
1	25 mtrs	Introductory	Nil	Prone Unsupported	Nil	5	1	a. 5 rds into the stop bank/bullet catcher. b. Coaches check and adjust positions. c. Encourage the firers.
RCO:	***"Detail Down, adopt the Prone Supported position. Test & Adjust. LOAD, ACTION - You are to fire Four Five Round Groups, one five round group per aiming mark - INSTANT, at your target in front……Fire"***							
2	25 mtrs	Grouping	Grouping Target	Prone Supported	Nil	20	4	a. 4 x 5 round groups at four aiming marks. b. ES of effective rounds is not to exceed **25**mm c. Firers who fail to achieve the grouping requirement are to repeat the serial. d. Record ES for each group and then inform firer of their GC.
RCO:	***"Detail Down, adopt the Prone Unsupported position. Test & Adjust. LOAD, ACTION - Ten rounds Deliberate - INSTANT, at your target in front……Fire"***							
3	50 mtrs	Elementary Application of Fire	No 29 Target	Prone Unsupported	Nil	13	3	a. 3 rds sighter group. Mark MPI only. b. Calculate Primary Adjustment (coaches to assist). c. 10 scoring rounds. d. **Scoring:** 6, 5 & 3. e. Minimum Acceptable Score – **40**. f. Firers to repeat serial if qual not achieved.
RCO:	***"Detail Down, adopt the Prone Unsupported position. Test & Adjust. LOAD, ACTION - You are to fire Two Five Round Groups, one five round***							

	Group per aiming mark - INSTANT, at your target in front……Fire"							
4	25 mtrs	Grouping	5A Double Facing	Prone Supported	Nil	10	2	a. 2 x 5 round groups at two aiming marks. b. GC of effective rounds should not exceed **25**mm. c. Magazine change required.

Ser	Range	Practice	Target	Position	Time	Rounds	Mags	Remarks
RCO:	***"Detail Down, adopt the Sitting Unsupported position. Test & Adjust. LOAD, ACTION - You are to fire Two Five Round Groups, one Five round Group per aiming mark - INSTANT, at your target in front……Fire"***							
5	25 mtrs	Grouping	5A Double Facing	Sitting Unsupported	Nil	10	2	a. 2 x 5 rd groups at two aiming marks. b. GC of effective rounds should not exceed **60**mm. c. Record ES.
RCO:	***"Detail Down, adopt the Kneeling Unsupported position. Test & Adjust. LOAD, ACTION - You are to fire Two Five Round Groups, one Five round Group per aiming mark - INSTANT, at your target in front……Fire"***							
6	25 mtrs	Grouping	5A Double Facing	Kneeling Unsupported	Nil	10	2	a. 2 x 5 rd groups at two aiming marks. b. GC of effective rounds should not exceed **70**mm. c. Record ES.

Notes:

1. In most situations this will be a cadet's first range experience. In this situation it must be preceded by appropriate range and safety orientation in accordance with the relevant syllabus. One shooting coach per cadet is ideal.
2. Serial 3 is fired in **two** parts. After the 3 rounds Sighters, firers and coaches can move forward to check MPI. This serial **must** be preceded by briefing on sequence of Elementary Application of Fire.
3. Target requirements:
   a. 1 x Grouping Target per firer;
   b. 1 x Superimposed No. 29 Target per firer; and
   c. 3 x 5A Double Facing Targets per firer.
4. Ammunition requirements:
   a. **68** rounds per firer.
5. Encourage all firers to excel and compliment achievement.

Marlin Model-XT: Progressive Range Practice Two (PRP 2)

Elementary Application of Fire

Ser	Range	Practice	Target	Position	Time	Rounds	Mags	Remarks
RCO:	***"Detail Down, adopt the Prone Unsupported position. LOAD, ACTION - Three rounds Sighters - INSTANT, at your target in front……Fire"***							
RCO:	***"Detail Down, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Deliberate - INSTANT, at your target in front……Fire"***							
1	25 mtrs	Elementary Application of Fire	Superimposed No 29 Target	Prone Unsupported	Nil	8	2	a. Fired as 3 and 5 rd groups, first 3 rd group sighter, second 5 rd group scoring. Mark MPI only of first 3 rd group. b. Scoring 6, 5 & 3. c. Minimum Acceptable Score – **20** d. Firers who fail to qualify are to repeat the serial.
RCO:	***"Detail Down, adopt the Sitting Unsupported position. LOAD, ACTION - Three rounds Sighters - INSTANT, at your target in front……Fire"***							
RCO:	***"Detail Down, adopt the Sitting Unsupported position. LOAD, ACTION - Five rounds Deliberate - INSTANT, at your target in front……Fire"***							
2	25 mtrs	Elementary Application of Fire	Superimposed No 29 Target	Sitting Unsupported	Nil	8	2	a. Conduct as in Serial 1. b. Scoring as in serial 1. c. Minimum Acceptable Score – **25** d. Firers who fail to qualify are to repeat the serial.
RCO:	***"Detail Down, adopt the Prone Unsupported position. LOAD, ACTION - Three rounds Sighters - INSTANT, at your target in front……Fire"***							
RCO:	***"Detail Down, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Deliberate - INSTANT, at your target in front……Fire"***							
3	25 mtrs	Elementary Application of Fire	Superimposed No 29 Target	Prone Unsupported	Nil	8	2	a. Conduct as in Serial 1. b. Scoring as in serial 1. c. Minimum Acceptable Score – **20** d. Firers who fail to qualify are to repeat the serial.

RCO:	***"Detail Down, adopt the Kneeling Unsupported position. LOAD, ACTION - Three rounds Sighters - INSTANT, at your target in front…Fire"***							
RCO:	***"Detail Down, adopt the Kneeling Unsupported position. LOAD, ACTION - Five rounds Deliberate - INSTANT, at your target in front…Fire"***							
4	25 mtrs	Elementary Application of Fire	Superimposed No 29 Target	Kneeling Unsupported	Nil	8	2	a. Conduct as in Serial 1. b. Scoring as in serial 1. c. Minimum Acceptable Score – **30** d. Firers who fail to qualify are to repeat the serial.

Notes:

1. This practice **must** be preceded by relevant level briefing on use and sequence of Elementary Application of Fire.
2. **All** Serials are fired in **two** parts. After the 3 rounds **Sighters**, coaches and firers can move forward and check the MPI.
3. Target requirements:
   a. 4 x Superimposed No 29 Target per firer
4. Ammunition requirements:
   a. **32** rounds per firer.

Standards

5. The minimum scores for each serial are as follows:
   a. Serial 1: **20** points
   b. Serial 2: **25** points
   c. Serial 3: **20** points
   d. Serial 4: **30** points
6. Pass Mark = **95** points.
7. Encourage firers to excel and compliment achievement.

Marlin Model-XT: Progressive Range Practice Three (PRP 3)

Engagement of Snap Targets

Ser	Range	Practice	Target	Position	Time	Rounds	Mags	Remarks
RCO:	***"Detail Down, adopt the Prone Unsupported position. LOAD, ACTION - Three rounds Sighters - INSTANT, at your target in front……Fire"***							
RCO:	***"Detail Down, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Deliberate - INSTANT, at your target in front……Fire"***							
1	50 mtrs	Elementary Application of Fire	Superimposed No 29 Target	Prone Unsupported	Nil	8	2	a. Fired as 3 and 5 rd groups, first group sighter, second group scoring. Mark MPI only of first group. b. Scoring: 6, 5 & 3. c. Qualifying score – **20** d. Firers who fail to qualify are to repeat the serial.
RCO:	***"Detail, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Snap at your Top Right aiming mark, 5 x 3 second exposures, fire 1 round per exposure - INSTANT, "Standby"……"Up" 1 - 3 count "Down"***							
2	50 mtrs	Snap	No 29 Target	Prone Unsupported	5 x 3 sec exposures	5	1	a. Scoring: 6, 5 & 3. b. Minimum acceptable score – **25** c. Firers who fail to qualify are to repeat the serial.
RCO:	***"Detail, adopt the Sitting Unsupported position. LOAD, ACTION - Five rounds Snap at your Top Right aiming mark, 5 x 5 second exposures, fire 1 round per exposure - INSTANT, "Standby"……"Up" 1 - 5 count "Down"***							
3	50 mtrs	Snap	No 29 Target	Sitting Unsupported	5 x 5 sec exposures	5	1	a. Scoring: 6, 5 & 3. b. Minimum acceptable score – **17** c. Firers who fail to qualify are to repeat the serial.
RCO:	***"Detail, adopt the Kneeling Unsupported position. LOAD, ACTION - Five rounds Snap at your Top Right aiming mark, 5 x 8 second exposures, fire 1 round per exposure - INSTANT, "Standby"……"Up" 1 - 8 count "Down"***							
4	50 mtrs	Snap	No 29 Target	Kneeling Unsupporte	5 x 8 sec exposures	5	1	a. Scoring: 6, 5 & 3.

				d				b. Minimum acceptable score – **15** c. Firers who fail to qualify are to repeat the serial.

RCO:	*"Detail, adopt the* ***Prone Unsupported*** *position. LOAD, ACTION - Five rounds Snap at your Top Right aiming mark, 5 x 3 second exposures, fire 1 round per exposure - INSTANT, "Standby"……"Up" 1 - 3 count "Down"*							
5	50 mtrs	Snap	No 29 Target	Prone Unsupported	5 x 3 sec exposures	5	1	a. Scoring: 6, 5 & 3. b. Minimum acceptable score – **25** c. Firers who fail to qualify are to repeat the serial.

RCO:	*"Detail, adopt the* ***Sitting Unsupported*** *position. LOAD, ACTION - Five rounds Snap at your Top Right aiming mark, 5 x 5 second exposures, fire 1 round per exposure - INSTANT, "Standby"……"Up" 1 - 5 count "Down"*							
6	75 mtrs	Snap	No 29 Target	Sitting Unsupported	5 x 5 sec exposures	5	1	a. Scoring: 6, 5 & 3. b. Minimum acceptable score – **17** c. Firers who fail to qualify are to repeat the serial.

RCO:	*"Detail, adopt the* ***Kneeling Unsupported*** *position. LOAD, ACTION - Five rounds Snap at your Top Right aiming mark, 5 x 8 second exposures, fire 1 round per exposure - INSTANT, "Standby"……"Up" 1 - 8 count "Down"*							
7	75 mtrs	Snap	No 29 Target	Kneeling Unsupported	5 x 8 sec exposures	5	1	a. Scoring: 6, 5 & 3. b. Minimum acceptable score – **15** c. Firers who fail to qualify are to repeat the serial.

Notes:

1. For serial 1, each firer is issued with 2 x magazines loaded as 1 x 3 round mag and 1 x 5 round mag.
2. Serial 1 is fired in **two** parts. After the 3 rounds **sighters**, coaches and firers can move forward and check the MPI.
3. Target requirements:
   a. 1 x Superimposed No. 29 Target and 7 x No. 29 Targets per firer
4. Ammunition requirements:
   a. **38** rounds per firer.

Standards

8. The minimum scores for each serial are as follows:
   a. Serial 1: **20** points

b. Serial 2 & 5: **25** points
c. Serial 3 & 6: **17** points
d. Serial 4 & 7: **15** points

9. Pass Mark = **134** points.
10. Encourage firers to excel and compliment achievement.

Marlin Model-XT: Progressive Range Practice Four (PRP 4)

Marksman Test

Ser	Range	Practice	Target	Position	Time	Rounds	Mags	Remarks
RCO:	***"Detail Down, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Grouping at your Top Left aiming mark - INSTANT, at your target in front…….Fire"***							
1	25 mtrs	Grouping	No. 29 Target	Prone Unsupported	Nil	5	1	a. 1 x 5 round group at the aiming mark. b. Discuss the group and record the group size.
RCO:	***"Detail, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Deliberate in 20 seconds at your Top Right aiming mark - INSTANT, at your target in front…….Fire"***							
2	25 mtrs	Deliberate	No. 29 Target	Prone Unsupported	1 x 20 sec exposure	5	1	a. Scoring: 6, 5 & 3. b. Minimum acceptable score – **22** c. Firers who fail to qualify are to repeat the serial.
RCO:	***"Detail, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Deliberate in 30 seconds at your Top Right aiming mark - INSTANT, at your target in front…….Fire"***							
3	25 mtrs	Deliberate	No. 29 Target	Sitting Unsupported	1 x 30 sec exposure	5	1	a. Scoring: 6, 5 & 3. b. Minimum acceptable score – **22** c. Firers who fail to qualify are to repeat the serial.
RCO:	***"Detail, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Deliberate at your Top Right aiming mark - INSTANT, at your target in front…….Fire"***							
4	25 mtrs	Deliberate	No. 29 Target	Kneeling Unsupported	1 x 40 sec exposures	5	1	a. Scoring: 6, 5 & 3. b. Minimum acceptable score – **22** c. Firers who fail to qualify are to repeat the serial.

Notes:

1. Target requirements: 4 x No. 29 Targets per firer.
2. Ammunition requirements:
    a. **20** rounds per firer.

Standards

3. The minimum scores for each serial are as follows:
    a. Serials 2 - 4: **22** points
4. Pass Mark = **124** points.
5. Encourage firers to excel and compliment achievement.

Marlin Model-XT: Progressive Range Practice Five (PRP 5)

Annual Firearms Qualification (AFQ)

Ser	Range	Practice	Target	Position	Time	Rounds	Mags	Remarks
RCO:	***"Detail Down, adopt the Prone Unsupported position. LOAD, ACTION - Five rounds Grouping at your Top Left aiming mark - INSTANT, at your target in front…….Fire"***							
1	25 mtrs	Grouping	No. 29 Target	Prone Unsupported	Nil	5	1	a. 1 x 5 round group at the aiming mark. b. Discuss the group and record the group size.
RCO:	**"Detail, Five rounds Deliberate in 60 seconds, at your Top Right aiming mark - Standby…….Fire"**							
2	25 mtrs	Deliberate	No. 29 Target	Prone Unsupported	1 x 60 sec exposure	5	1	a. Rifle loaded. b. On the order ***"5 rounds watch and shoot"***.
RCO:	**"Detail, Five rounds Rapid in 35 seconds, at your Bottom Left aiming mark - Standby…….Fire"**							
3	25 mtrs	Rapid	No. 29 Target	Prone Unsupported	1 x 35 sec exposure	5	1	a. Rifle loaded. b. On the order ***"5 rounds watch and shoot"*** fire 1 round per exposure.
RCO:	**"Detail, Five rounds Snap, at your Bottom Right aiming mark - Standby…….Up - 1 to 5 count - Down"**							
4	25 mtrs	Snap	No. 29 Target	Prone Unsupported	5 x 5 sec exposures	5	1	a. Rifle loaded. b. On the order ***"5 rounds watch and shoot"*** fire one round per exposure.
RCO:	**"Detail, Five rounds Snap, at your Bottom Right aiming mark - Standby…….Up - 1 to 5 count - Down"**							
5	25 mtrs	Snap	No. 29 Target	Prone Unsupporte	5 x 5 sec exposures	5	1	a. Rifle loaded. b. On the order ***"5 rounds watch and shoot"*** fire one

				d				round per exposure.

RCO:	"Detail, Five rounds Snap, at your Bottom Right aiming mark - Standby…….Up - 1 to 5 count - Down"							
6	25 mtrs	Snap	No. 29 Target	Prone Unsupported	5 x 5 sec exposures	5	1	a. Rifle loaded. b. On the order ***"5 rounds watch and shoot"*** fire one round per exposure.

Notes:

1. Target requirements: 4 x No. 29 Targets per firer.

Standards

1. The practices are scored as follows:
   a. Serial 1 scored as:
      (1) 25mm group = 25 points.
      (2) 40mm group = 20 points.
      (3) 50mm group = 15 points.
      (4) 65mm group = 10 points.
   b. Serials 2, 3 & 4 are scored as:
      (1) Hits inside centre ring = 5.1 points per hit.
      (2) Hits inside inner ring = 5 points per hit.
      (3) Hits inside outer ring = 3 points per hit.
      (4) Any hits outside outer ring = 0 points.
   c. Total the scores for serials 1, 2, 3 & 4.
      (1) Trained Firer = 70
      (2) Score of merit = 85
      (3) HPS = 101.5

Practice FIVE - Annual Firearms Qualification Scoring Information

Scoring Level (Status)	**RECRUIT**	**TRAINED CADET**	**MARKSMAN**	**HPS**
Minimum Acceptable Score:				
Marlin Model-XT .22 Rifle	71	136	205	375.30

Practice FIVE - Annual Firearms Qualification Results Sheet

	Name	Scored by Serial								Score by Target						
		1	2	3	4	5	6	7	8							Remarks
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

Range Conducting Officer: _____

Rank / Initials / Name: _____ **Date:** _____

Note: Two scoring options shown. Scoring by serial is offered for analysis purposes (Teach the Test?) as required.

PART 5 – Purpose Built Range Firing

SECTION 1 – Pre-Range Shoot Administration

Introduction

5.1 Purpose-built range firing validates individual training. It is a culminating activity aimed at raising the level of confidence and competence in individuals and teams during preparation for competition shoots. Theory, dry, practice, and simulation training are all necessary in developing the skills required during purpose-built range firing. However, these training mediums cannot replace the unique benefits achieved in a purpose-built range firing environment.

Firearms Qualification Requirements

5.2 The qualification requirement criteria required to carry out individual firer appointments for all purpose-built range practices is laid down in Annex A to this Section.

Range Safety Staff Qualification and Authorisation

5.3 The qualification and authorisation criteria required to carry out range safety staff appointments for all purpose-built range practices is laid down in Section 2 of this Part.

Purpose-Built Range Practice Procedures

5.4 The procedures for the planning, conduct, and post practice administration of purpose-built range practices are laid down in Section 3 of this Part.

Submission of Pre-Range Practice/Shoot Documentation

5.5 Prior to conducting any Cadet Unit live firing range activities on civilian or military ranges, the following documentation **is to be compiled and sent** to the appropriate CFTSU within the prescribed lead time of **14 days** prior to the planned range activity for approval (refer to CFO, Vol 7, Chapter 3, Section 2). If the following documentation is **not** submitted, then the planned range activity is **not** to occur:

a. NZCF 11, Cadet Unit Activity Intention;

b. NZCF 12, Risk Management Plan (if using a different range); and

c. NZCF 33, General Range Instruction.

Cadet Unit Range Practices on NZ Army Purpose-Built Ranges

5.6 Upon receiving the NZCF 33, General Range Instruction from the cadet unit, the Area CFTSUs are to forward it to the appropriate Range Controlling Authority (RCA) responsible and are to make any Range Bookings as required on behalf of the cadet unit, in accordance with any lead times set by the respective RCAs. The RCAs for NZDF ranges are:

a. **Headquarters 1 (New Zealand) Brigade.** For all North Island ranges (less those at Waiouru Military Training Facility, Trentham, and Ardmore);

b. **Headquarters Waiouru Military Training Facility.** For all Waiouru Military Training Facility ranges;

c. **Headquarters Wellington Regional Support Centre.** For all Trentham ranges;

d. **Headquarters 1 New Zealand Special Air Service Regiment.** For all Ardmore ranges; and

e. **Headquarters Southern Regional Support Centre.** For all South Island ranges.

5.7 The RCAs designated above are to confirm that all requirements of respective range standing orders have been met, that **authorised** range practices are to be conducted, and that safety coordination relevant to the use of the overall range area has been resolved. The RCA is to manage this process by 'Negative Vetting' except where an error is identified in the NZCF 33, General Range Instruction, in which case the originating unit is to be notified immediately. The range practice is **not** to proceed until the error has been rectified to the standard required of the Range Controlling Authority.

SECTION 2 – Qualification and Authority

Introduction

5.8 To be qualified to plan, conduct, or supervise a purpose-built range practice, the NZCF officer is to have attended and qualified on the NZCF Range Conducting Officer course. The course will award range appointment qualification categories consistent with the course training objectives and these are to be shown on the student course report.

5.9 The success and safety of purpose-built range firing practices are directly influenced by the Range Conducting Officer's experience and ability in man-management and administration, as well as the Range Conducting Officer's competence to conduct purpose-built range firing. The Officer In Charge of the Practice is to consider an individual's suitability in these fields before appointing that person to conduct the forms of purpose-built range firing for which the individual is course qualified.

Officer in Charge of the Practice

5.10 The Area Coordinator or Senior Area Advisor, in the absence of the AC, of the Cadet Forces Training and Support Unit conducting an **authorised** NZCF Range Conducting Officer or Shooting Coach course and Area or National Skills Competition is the appropriate command level authority to authorise the activity on behalf of the Commandant New Zealand Cadet Forces.

5.11 The Cadet Unit Commander of the cadet unit conducting a **recognised** cadet unit purpose built range practice is the appropriate command level authority to authorise the cadet unit activity on behalf of the Commandant New Zealand Cadet Forces.

Officer in Charge of the Practice Responsibilities

5.12 The Officer In Charge (OIC) of the Practice is not expected to attend the purpose-built range practice but **is responsible** for ensuring that the:

a. range activity is in accordance with the unit training plan;

b. appropriate range for the type of activity is to be used;

c. range conducting officer(s) is/are suitably qualified, **current** and authorised;

d. training level of the cadets being exercised is appropriate to the activity being conducted; and

e. NZCF 33, General Range Instruction is signed once he or she is happy with the activity to be conducted and has been briefed by the activity planner.

Note: This appointment (OIC Practice) cannot be delegated.

Range Conducting Officer

5.13 NZCF Officers are deemed qualified to be appointed as a RCO for the purpose of conducting purpose-built range practices subject to the OIC Practice consideration at paragraph

5.12 of this section and the criteria laid down in Annex A to this section, providing they have qualified at the NZCF Range Conducting Officer course.

5.14 The following additional criteria are to apply where a Primary Range Conducting Officer is required:

a. **Primary Range Conducting Officer.** Where the OIC of the Practice appoints more than one range conducting officer for the same purpose-built range practice, the first listed range conducting officer is to be the designated primary range conducting officer and is to act as the point of contact during the activity and is to conduct the initial range safety brief. The activity planner if not the primary range conducting officer is to act as the initial point of contact during the planning and preparation stage of the activity and is to conduct a detailed handover prior to the activity beginning.

Safety Supervisor

5.15 Officers, Warrant Officers, Senior Non-Commissioned Officers of SSGT(E) are deemed qualified to be appointed as a Safety Supervisor for purpose-built range practices subject to the criteria laid down in Annex A to this section, providing they have met the following criteria:

a. have qualified on the Dry Firing Training Tests for the rifle that they are to supervise; and

b. have been fully briefed on, and where necessary practised in, the Safety Supervisor's responsibilities and duties by the RCO.

Shooting Coaches acting as Safety Supervisors for Purpose Built Ranges

5.16 Shooting Coaches assume the responsibility of a Safety Supervisor for purpose built range practices. Every effort is to be made to ensure that Safety Supervisor responsibilities for a purpose built range practice are carried out by a qualified Shooting Coach:

a. **Qualified Shooting Coach.** Shooting Coaches are deemed to be qualified and current providing they have:

(1) Qualified at a relevant course as laid down in Annex A to this section.

(2) Qualified at Dry Firing Training Tests for the rifle that they are to supervise; within the previous **7 days**, or earlier if deemed necessary by the Officer in Charge of the Practice.

b. **Safety Supervisors who are NOT Qualified by Course**. Officers, warrant officers, senior non-commissioned officers may be appointed as Safety Supervisors for a purpose-built range practice providing that they have:

(1) Qualified at Dry Firing Training Tests for the rifle that they are to supervise; within the previous **7 days**, or earlier if deemed necessary by the OIC of the Practice.

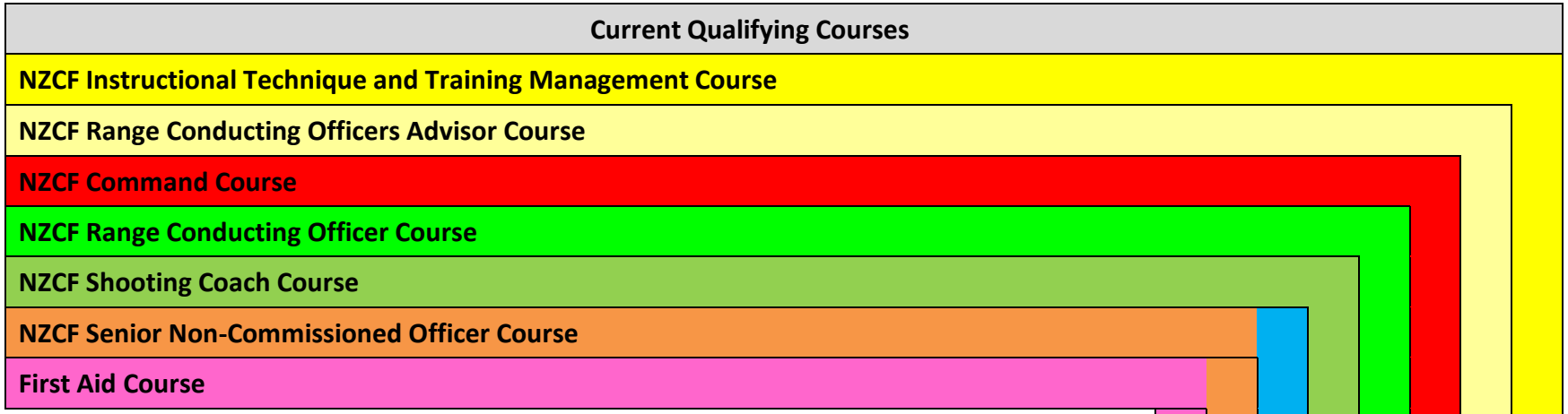
(2) Been **fully** briefed on, and where necessary practised in, the Safety Supervisor's responsibilities and duties by the RCO.

Qualifying Courses and Appointments for Purpose Built Range Practices

5.17 The table given in Annex A to this section shows the range qualifications and appointments achieved following qualification at current courses. All range appointment qualifications are to be recorded on individual course reports and on the individuals' personal file held by the cadet unit.

5.18 **Under NO circumstances can a person who is not course qualified be authorised to conduct a live firing range practice or coach a firer on the range.**

ANNEX A to Section 2 – Qualifications for a NZCF Live Firing Range Practice



Type of Live Forces Firing Range Practice	Appointment (See Note 1)	Minimum Rank	First Aid Course	NZCF Senior Non-Commissioned Officer Course	NZCF Shooting Coach Course	NZCF Range Conducting Officer Course	NZCF Command Course	NZCF Range Conducting Officers Advisor Course	NZCF Instructional Technique and Training Management Course	Remarks
New Zealand Cadet Forces Live Firing Range Practice	**Officer In Charge of the Practice** - Purpose Built Range Practice	NZCF 2LT (E)					X			See note 2
	Regular Force Range Conducting Officer - Purpose Built Range Practice	RF SNCO						X		See note 8
	Range Conducting Officer - Purpose Built Range Practice	NZCF 2LT (E)				X				See note 3
	Shooting Coach - Purpose Built Range Practice	NZCF SSGT (E)		X		X				See notes 3 & 4
	Safety Supervisor - Purpose Built Range Practice	NZCF SSGT (E)		X						See note 7
	Ammunition Safety Supervisor - Purpose Built Range Practice	NZCF SSGT (E)		X						See note 5
	First Aider - Purpose Built Range Practice	By Appointment	X							See note 6

							X	X			X	See note 9

Notes:

1. All **Appointments** are for an NZCF purpose built range practice whether it be an Authorised or Recognised purpose built range practice.
2. COMDT NZCF, AC CFTSU, Senior Area Advisor in the absence of the AC CFTSU and Cadet Unit Commander who has qualified on the NZCF Command course.
3. Qualification on the NZCF Range Conducting Officer Course and NZCF Range Conducting Officer Advisor Course.
4. Qualification on the NZCF Shooting Coach Course **after** 03 August 2017.
5. NZCF Officers, UOs, SNCOs may be appointed as the Ammunition Safety Supervisor for NZCF range practices providing they:
   a. are of the minimum authorised rank; and
   b. have been **fully briefed** of their responsibilities and duties by the RCO.
6. Qualified and **CURRENT** on either a:
   a. St John First Aid Level One Certificate; or
   b. Red Cross Save a Life Certificate; or
   c. NZQA Unit Standards 6400/6401; or
   d. NZDF First Aid Certificate.
7. NZCF Officers, UOs, SNCOs and NZCF RF Staff may be appointed as Safety Supervisors for NZCF range practices providing they:
   a. are of the **minimum** authorised rank (NZCF pers only);
   b. have been trained and tested on the Dry Firing Training Tests assessment for the Marlin Model-XT .22 rifle within 7 days prior to the range practice; and
   c. have been fully briefed on, practised and rehearsed in, the safety supervisor's responsibilities and duties by the Range Conducting Officer.
8. NZDF Regular Force Senior Non-Commissioned Officers posted to New Zealand Cadet Forces.
9. Range Conducting Officer or Shooting Coach qualified NZCF Officer nominated by the AC CFTSUs and approved by S7 TDO.

SECTION 3 – Purpose Built Range Practice Planning

Introduction

5.19 The conduct and rules contained in this section refer to purpose-built ranges primarily for training individuals to NZCF Annual Firearms Qualification standard.

Planning a Purpose Built Range Practice

5.20 Range space and time are always at a premium. Every effort is to be made to utilise the allocation to the full. Planning is to be carried out to ensure that 'first rounds' go down the range at the start of the allowed shooting period, that breaks are kept to a minimum, and administrative detail does not delay shooting.

5.21 **Training Objectives.** Before detailed planning can start, the objectives to be achieved, the number of cadet's to be exercised and the range staff available must be stated.

5.22 **Range Reconnaissance.** Before planning can take place a reconnaissance of the range is required to ascertain the facilities availability and **suitability**. If, in the opinion of the RCO, the standard of range maintenance has deteriorated to the extent that it is unsafe, this is to be brought to the attention of the range controlling authority (RCA) for NZDF ranges or the range owner/operator for civilian ranges.

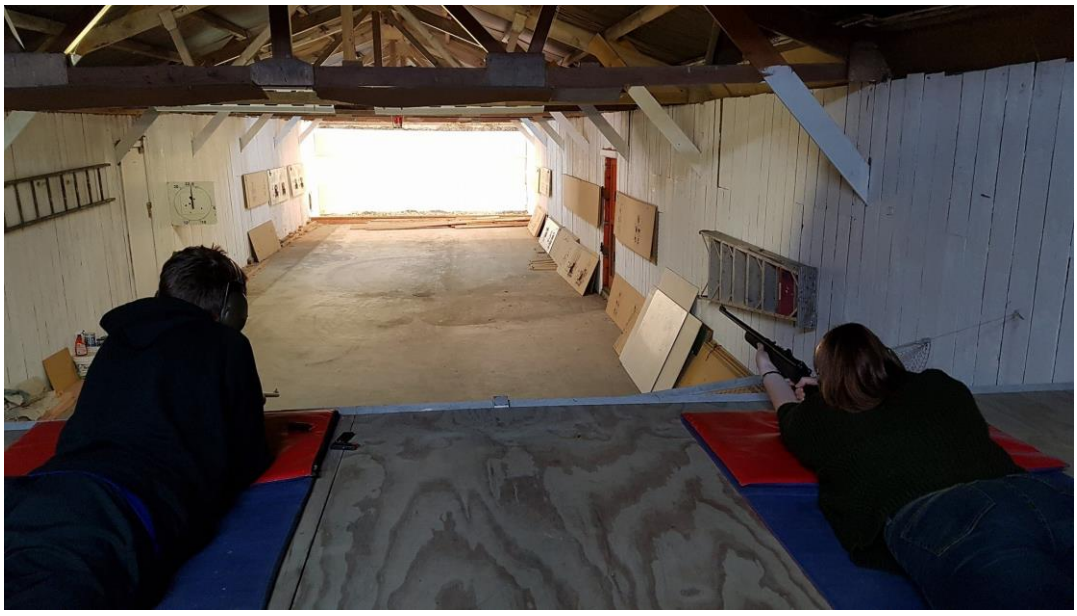


Fig 81 - A potentially unsafe indoor civilian range

5.23 **Range Standing Orders.** Planning is to take into account the regulations set out for the particular range area. **A Copy Of The Relevant Range Standing Orders Is To Be Obtained And Read** (see Part 7, Section 1 of this manual).

5.24 **Administration.** Apart from detailed administration on the range, detail involving other unit or sub-unit assistance is to be considered well in advance:

a. transport (include that required for rehearsal and/or reconnaissance);

b. ammunition;

c. rationing;

d. stores;

e. standard of available shooting coaches and the training of additional ones;

f. inspection of rifles; and

g. availability of instructors and stores for concurrent activity.

Ammunition Entitlement

5.25 The quantity of ammunition available for training is based on unit allocations that have been authorised by Commandant NZCF. The cadet unit ammunition allocation can be found in Cadet Force Orders, Volume 2, Chapter 3, Section 2, paragraph 2.78, Table 13-1. The CUCDR is to allocate their ammunition responsibly.

Planning a Purpose-Built Range Practice

5.26 The role of the RCO is to plan and conduct **all** .22-rifle training within the cadet unit and **all** range practices IAW this training manual, NZCF training syllabi and NZCF policy and procedures, i.e. Cadet Force Orders, Volume 7, Chapter 3. In order to carry out that role safely, the RCO must have a comprehensive knowledge of both firearms training and the many safety requirements and procedures that have to be observed or considered prior to and during the range practice. The notes herein cover all the aspects of range practices that the RCO is responsible for.

5.27 In order to enhance safety and to get the maximum benefit from the time available, the RCO must use sound planning and preparation before going to the range. The whole process of planning and conducting a cadet unit purpose built range practice can be approached by breaking the task into three stages:

a. Planning;

b. Conduct; and

c. Post-practice administration.

Planning Points

5.28 The following are considerations of the planning stage:

a. **Task.** Define the task objective by answering these questions:

(1) What is the purpose of the range practice?

(2) What standard must the firers achieve?

b. **Type of Practice.** Define the type of practice to be fired:

(1) Who is to fire the practice?

(2) Are the firers new to the rifle, and if so:

(a) Is a demonstration, introductory, grouping or zeroing practice required?

c. **Type of Range.** The type of practice will suggest what type of range is required, for example – if it is an introductory, grouping or zeroing practice, then a 25mtr indoor range will suffice or if firing from the sitting and kneeling positions and longer distances then a 25-100mtr outdoor range will be required;

d. **Publications and Safety References.** Read and be conversant with **all** relevant publications and safety references, including:

(1) The appropriate Training Manual(s).

(2) The appropriate Range Standing Orders.

(3) Any temporary orders that supplements Training Manual(s) or Range Standing Orders.

(4) Does the range have a current 199, Range Safety Certificate (NZDF ranges)?

e. **Targetry.** When considering targetry, the following points should be taken into account:

(1) The types of targets required for the practice.

(2) The condition of the target frames in relation to the requirement to produce accurate shooting results.

(3) Allowance for the likelihood of loss or damage in windy or wet conditions.

(4) The target supply source, given timely warning to ensure an adequate supply of targets needed to complete the practice (HQ NZCF or Area CFTSU).

(5) Target display height (indoor and outdoor range).

f. **Firearms Restrictions.** Range Standing Orders may restrict the number of rifles that can be safely fired on the range at any one time. Restrictions of this nature affect the size of the detail and therefore the overall time to conduct the shoot. Certain practices may require additional staff, such as shooting coaches or safety supervisors, when the firers are either new or partially trained cadets. This can affect the number of personnel on the firing point;

g. **Ammunition Restrictions.** See appropriate Range Standing Orders and/or Cadet Force Orders, Volume 2, Chapter 3 – Firearms, Section 2 for limitations on the use of ammunition in training;

h. **Time.** There seldom appears to be sufficient time to complete range practices to the satisfaction of the training staff. Maximum use of the time available is achieved by concurrent activity and smooth organisation. Time should be considered under three headings:

(1) Time allocated by the training programme.

(2) Travelling time to and from the range.

(3) Time required to complete each detail multiplied by the number of details.

i. **Range Safety Staff.** Qualified range staff are necessary for some range appointments. They include the following (see Annex A to Section 2 for Course Qualifications required for each appointment and Annex C, Appendixes 1 & 5, Section 3 for the detailed descriptions of range staff duties/responsibilities):

(1) Officer in Charge of the Practice (OIC Practice).

(2) Range Conducting Officer(s) and a Primary Range Conducting Officer (when appropriate) *(See notes 1 & 2)*

(3) Shooting Coach(s)

(4) Safety Supervisor(s)

(5) Communications Non-Commissioned Officer (if required).

(6) Non-Commissioned Officer in charge of waiting details.

(7) Ammunition Safety Supervisor.

(8) Qualified and **current** first aider.

(9) Sentries (if required by Range Standing Orders).

j. **Range Reconnaissance.** The range reconnaissance is carried out well in advance to allow time for organising extra equipment and support if required. The following check-list should be taken into account during any range reconnaissance:

(1) **Travel.** Travelling time and route to and from the range and the local medical centre must be checked and assessed to confirm outline timings.

(2) **Ranges.** Availability of suitable ranges in the area, bearing in mind the type of practice and numbers involved.

(3) **Range Safety Certificate.** The range selected/allocated for the practice **must** have a current 199, Range Safety Certificate (NZDF ranges). For civilian ranges if, in the opinion of the RCO, the standard of range maintenance has deteriorated to the extent that it is deemed unsafe the range is not to be used.

(4) **Targetry.** How many target frames are serviceable and what target types are available?

(5) **Fire Positions.** Mounds and supported positions may be required for the practices. Is the range set up for this? If not, make alternative arrangements.

(6) **Range Standing Orders.** Each range should have a set of Range Standing Orders. These **need** to be read and understood as they state where any red flags or danger boards are to be displayed etc. Be aware that civilian ranges may not have a set of Range Standing Orders like military ranges, but may have Range Safety Rules instead.

(7) **Communications.** Communications may be standard range equipment, i.e. land line etc. Check this equipment for serviceability and be prepared to supply communications from unit resources.

(8) **Medical Support.** See Annex C, Appendix 03 of this Section for medical support provisions.

(9) **Rations.** Ration arrangements may be necessary and the extent of these will depend on the distance of the range from the cadet unit and the amount of time to be spent on the range. Include a drink of some description, hot or cold depending on the time of year. Also check for washing facilities so hands can be washed prior to eating and drinking.

(10) **Transport.** Sufficient vehicles to convey range staff, main body, rifles and ammunition to the range are to be organised. Passengers are to be allocated vehicles and drivers with timings, and tasks etc.

(11) **Ammunition.** Ammunition that is required to complete the practice plus a reserve for zeroing and reshoots is to be calculated and arranged through the Area CFTSU if required, who will need sufficient lead time to deliver if needed.

k. **Range Documentation.** Compile forms NZCF 11, 12 & 33 and submit these forms, as a package, to the appropriate Area CFTSU within **14 days** of the planned range practice for approval; and

l. **Range Appointments.** Personnel holding range appointments **are to be** warned out and **briefed** on their duties/responsibilities (see Annex C Appendixes 1-5 to this Section).

Notes:

1. The RCO **cannot** and **is not** to hold any other of the above range appointments, even if they are the only NZCF Commissioned Officer present.
2. A Primary RCO is to be appointed if more than one RCO is conducting the range practice, i.e. for large inter-unit shooting competitions etc.

Conduct and Post-Practice Administration: Purpose Built Ranges

5.29 The following information is provided to assist in the conduct of a cadet unit range practice. The sequence may be altered to suit individual requirements. It is suggested that during the RCOs appreciation, a time should be established for the first round to be fired down range. This then provides a set timing for subordinate appointments to work back from.

5.30 The following tasks are not in any particular order as each circumstance will be slightly different depending on each cadet unit.

Rifle Serviceability Check

5.31 Rifles **are to be** inspected for serviceability prior to being used for training and especially prior to being used for a live firing range practice. The rifle serviceability checklist can be found at Annex G to this Section.

Work Parties

5.32 Arrange for the ammunition to be at the range in sufficient time for the ammunition point to be set up and ready for the commencement of the practice as soon as the main body arrives. This includes the loading of all magazines IAW the type of practice and serials to be fired.

Red Flags or Lights

5.33 Red flags are to be displayed 30 minutes before firing commences and are to remain displayed for the duration that any hazard exists. The flag locations are to be in accordance with Range Standing Orders.

5.34 Red and green lights and range doors for indoor ranges are to be checked for operation and that they function correctly.

Organise Details

5.35 As the main body arrives and debusses they are to be formed into firing details. If possible the allocation of firing details should be done during the preparation for the practice.

Range Safety Brief

5.36 A participants' range safety brief (see Annex E to this Section) is to be given to **all** participants (range staff are to be present) on range safety and the conduct of the practice. Briefing of the range staff (appointment holders brief) should be conducted before arriving at the range (see Annex D to this Section).

5.37 The following list of **safety rules** are to be emphasised during the brief, and wherever possible, to all firers:

a. loaded firearms are always to be pointed down the range,

b. firearms are only to be loaded on command of the RCO,

c. safety catches, when possible, are to be applied whenever firing stops,

d. whenever picking up a firearm, firers are to ensure it is unloaded, and

e. any special safety procedures specific to the range in use.

Cleaning Before Firing

5.38 Shooting coaches are to supervise cleaning before firing if this has not already taken place before arrival at the range.

Rifle Serviceability Check

5.39 Shooting coaches are to supervise the serviceability check of all rifles to be used in the practice. This check **is to be** conducted before departing the cadet unit.

Begin the Practice

5.40 First detail is ordered to the firing point and numbers off.

5.41 The RCO must ensure that firers are not pressured to fire serials with undue haste.

Words of Command

5.42 The following are the commands given by the RCO when **NOT** utilising Shooting Coaches or Safety Supervisors.

Commands by RCO	Actions by Firers & Range Staff
"Detail Down"	Firers take up the prone position behind their rifles. Firers put on ear defenders.
"Take up the rifle, remove the CSD and Test and Adjust your Position" **"Take the rifle out of the aim when you are ready"**	Firers take up the rifle, removes chamber safety device and tests and adjusts their position Firers, once ready lower the rifle out of the shoulder to the 'rest' position
"Put on your Ear Defenders"	All personnel on and within 10 mtrs of the firing point are to put on hearing protection.
"Issue Ammunition"	Ammo Safety Supervisor issues the required amount of magazine(s) to the firers. If the physical set up of the range makes issuing the ammo difficult once the firers are down, it is permissible to issue ammo before firers have been ordered 'Detail Down'
"Load"	The firers are to place the magazine into the rifle
"Action"	The bolt is closed and the safety catch is applied to safe

Commands by RCO	Actions by Firers & Range Staff
The serial to be fired is detailed to the firers, for example: ***"5 rounds top left aiming mark followed by 5 rounds top right aiming mark".***	
"Instant"	The rifle is raised into the shoulder and the safety catch is applied to fire
"At Your Target(s) In Front, Fire" or **"Watch Your Front, Standby - Up…….Down"**	Firers commence firing appropriate amount of rounds as detailed by RCO 5-second exposures, one shot per exposure. Firer to reload automatically and gets ready for the next exposure. Between each exposure the rifle is in the 'rest' position
When firing is completed, the RCO should confirm that all firers have finished the practice before continuing. If the current detail requires to check targets, or there are no further serials for them to fire, the RCO gives the following commands:	
"Unload"	Firers remove the magazine, open bolt and inspect chamber, breech and face of the bolt
"For Inspection - Parallel Arms"	Firers are to ensure the bolt is held to the rear and holds up the magazine(s)
"Clear"	When told the rifle is clear and firer receives a tap on the shoulder, firer then inserts the Chamber Safety Device and lays rifle on ground
When the RCO has physically cleared the rifles he/she gives the commands.	
"Stand Clear" or **"Detail Up"**	Firers stand up to the rear of the groundsheet
The RCO then directs the firers to move forward to inspect targets or to move off the firing point as appropriate.	

Use of Shooting Coaches and/or Safety Supervisors

5.43 The use of Shooting Coaches or Safety Supervisors, if available, are to be used whenever conducting a live firing range practice. The shooting coach or safety supervisor assists the RCO in a variety of ways and lessens their workload. When using shooting coaches or safety supervisors the RCO **is to** give them ample time in which to perform their specific duties, the shooting coaches or safety supervisors will indicate to the RCO when the firer is ready to continue. The following are the commands given by the RCO when **using** shooting coaches or safety supervisors.

Commands by RCO	Actions by Firers & Range Staff
"Detail Down"	Firers take up the prone position behind their rifles.
"Take up the rifle, remove the CSD and Test and Adjust your Position"	Firers take up the rifle, removes chamber safety device and tests and adjusts their position under the

Commands by RCO	Actions by Firers & Range Staff
	guidance of the coach or supervisor
"Take the rifle out of the aim when you are ready"	Firers, once ready lower the rifle out of the shoulder to the 'rest' position. Coach or Supervisor then indicates to the RCO that the firer is ready to continue
"Put on your Ear Defenders"	All personnel on and within 10 mtrs of the firing point are to put on hearing protection.
"Issue Ammunition"	Ammunition Safety Supervisor issues the required amount of magazine(s) to the firers. If the physical set up of the range makes issuing the ammunition difficult once the firers are down, then it is permissible to issue ammunition before firers have been ordered 'Detail Down'
"Load"	Firers are to place the magazine into the rifle. If needs be the shooting coach details the actions to the firer.
"Action"	Bolt is closed and the safety catch is applied to safe. If needs be the shooting coach details the actions to the firer.
"Instant"	Rifle is raised into the shoulder and the safety catch is applied to fire. If needs be the shooting coach details the actions to the firer.
"5 Rounds Grouping At Your Top Right Aiming Mark, Under The Supervision of your Shooting Coaches, Go On"	Shooting coaches carry out their duties. It is important for the RCO **not** to rush the coaches so as to let them do their job.
The Shooting Coaches or Safety Supervisors will indicate to the RCO their firers have expended their ammunition. Once all firers have expended their ammunition the RCO will give the following commands:	
"Unload"	Firers remove the magazine, open bolt and inspect chamber, breech and face of the bolt. If needs be the shooting coach can detail the actions to the firer.
"For Inspection – Parallel Arms"	Firers are to ensure the bolt is held to the rear and holds up the magazine(s). The coaches or supervisors can inspect their firers rifles and indicate to the RCO they are clear by stating – **"No 1 Clear"**, **"No 2 Clear"** and so on. When told the rifle is clear by the coach or supervisor, the firer inserts the chamber safety device and lays rifle on ground.
"Stand Clear" or **"Detail Up"**	Firers and shooting coaches/safety supervisors stand up to the rear of the groundsheet.

Commands by RCO	Actions by Firers & Range Staff
"Firers and Coaches Move Forward and Check Targets"	Firers and coaches check targets. Coach discusses points with firer back at the firing point. **RCO is to give time for this to happen**.
Firers and coaches/safety supervisors return to firing point and take up position behind the rifles and discuss any remedial action required by the firer.	

Note: Depending on the type of practice, the coach will indicate if their firer is to remain on the firing point to continue shooting or to change firers. This will occur normally if you are conducting a Grouping or a Zeroing practice.

5.44 Subsequent practices or details are run in the same manner. The RCO may choose to run straight into the next serial without unloading, **only** if it is **appropriate** to do so.

Accident Procedure

5.45 In the event of an accident on the firing point involving firearms the RCO **is to** carry out the following:

a. immediately stop the practice, clear remaining firearms and remove all personnel from the firing point;

b. render first aid to the injured and get appropriate medical assistance ASAP;

c. ensure that the rifle involved and all fragments are left untouched and that no attempt is made to clean them or coat them with any preservative;

d. advise the police;

e. advise the Commandant NZCF ASAP;

f. carry out any other notification action as detailed in Range Standing Orders;

g. notify their Area Co-ordinator through the Cadet Unit Commander as soon as possible; and

h. supply a written report to the Area Co-ordinator through their Cadet Unit Commander within 24 hours.

Note: The RCO **is** to read the relevant paragraph in the Range Standing Orders as to what procedures are to be taken in the event of an accident or incident involving ammunition or firearms on the range. These accident/incident procedures may differ from the above and take precedence over the above procedure.

5.46 Firearms and ammunition involved in the accident or incident are not to be disturbed other than to unload and clear firearms the remainder of the firearms not involved, until the appropriate authorities complete their preliminary investigations.

5.47 In the event that the RCO is injured the alternate RCO or the most **senior** person present **is to** assume full control of proceedings.

Waiting Details

5.48 Waiting details are to be gainfully employed by:

a. observing the detail on the firing point (if possible), so that they become familiar with the format of the shoot, thereby reducing the amount of practice description by the RCO; and

b. practising rifle handling covering the actions and firing positions that are to be carried out during the practice.

Inspection after Firing

5.49 As each firing detail completes the practice, rifles are to be cleared by inspection. For rifle inspections, the command **'PARALLEL ARMS'** is to be used regardless of the type of range. Unexpended ammunition is to be collected by the Ammunition Safety Supervisor and returned to the ammunition point.

Post Practice Administration

5.50 At the completion of the practice the RCO is to arrange work parties to clear the range of brass and generally tidy up and collect stores.

5.51 A final inspection of rifles and magazines is to be conducted prior to the rifles being placed in the boxes for delivery back to the firearms storage facility.

5.52 A range clearance certificate is to be completed by the RCO (if required by the range standing orders).

Removal of Range Produce, Rubbish, Debris and Brass

5.53 On completion of any live firing activity, the RCO or the person responsible for the conduct of the activity is to ensure that, where possible, all range produce, rubbish, debris, and brass, which is clearly identified as non-hazardous, is removed from the range in accordance with the requirements and procedures of local range standing orders.

5.54 The disposal of empty ammunition packets is to be carried out as follows:

a. all empty ammunition boxes are to ripped open and folded flat, this is to ensure there are no ammunition left in them; and

b. placed in a large **clear** plastic bag for disposal.

5.55 Range produce, rubbish and brass are defined as:

a. **Range Produce** – Any item that is produced as a result of the preparation, firing of any ammunition (less brass). This includes ammunition containers;

b. **Rubbish** – any item not defined as range produce or debris. This will normally consist of man-made materials specifically used for the conduct of the activity and includes waste material, refuse or litter, sand bags, used targets and expended range stores; and

c. **Brass (Expended Cartridge Cases)** – all brass is to be recovered separately and placed in a double sandbag layer. All personnel are to remain vigilant when recovering brass to ensure there is no contamination with other range produce, rubbish, debris, **or live ammunition**. The range conducting officer is responsible for checking and certifying that bags of brass are free from contamination. Bags of brass are to be secured with the range conducting officer's certification on the tag/label of each bag at the completion of refurbishment.

Ammunition Accounting

5.56 The RCO is to account for **all** ammunition during the range practice on the NZCF 201, Firing Point Register (see Annex F to this Section).

NEW ZEALAND CADET FORCES

GENERAL RANGE INSTRUCTION (GRI) *(See note 1)*

References:

A. _____ Range Standing Orders (NZDF Ranges only)

B. _____ Range Safety Rules or Equivalent (Civilian Ranges only)

C. Cadet Force Orders, Volume 7 (CFO, Vol 7)

D. NZCF 151, Firearms Training Manual, Part Five

Part One – Officer in Charge of the Practice Authorisation *(See note 2)*

(To be completed by the CUCDR / Area Co-ordinator / Senior Area Advisor)

1. *(Unit/Course)* *abbreviate* _____ is to conduct a range practice on the _____ Range on *(Date)* _____ and *(Date)* _____ for the purpose of:

Introduction Shoot: ☐ Unit Range Day: ☐ Competition Shoot: ☐ NZCF Course: ☐

2. **Type of Shoot(s):** The type(s) of shoot(s) to be fired are/is *(See note 3)* _____ and _____.

3. **Appointment of Range Conducting Officer(s):** I appoint the following person(s) as the Range Conducting Officer(s) and certify that he/she/they are qualified, current, competent and suitably experienced to conduct the New Zealand Cadet Forces shoot at paragraph 2 of this part:

a. Rank: _____ Init: _____ Name: _____ NZCF 40 No: _____

b. Rank: _____ Init: _____ Name: _____ NZCF 40 No: _____

c. Rank: _____ Init: _____ Name: _____ NZCF 40 No: _____

d. Rank: _____ Init: _____ Name: _____ NZCF 40 No: _____

4. **Officer in Charge of the Practice Authorisation**. I authorise the conduct of this NZCF shoot in accordance with the above references and provisions to this notification.

Signature: _____

Initials, Name: _____

Rank: _____

Appointment: _____

Date: _____

_____

Part Two – Range Safety Details ***(See note 4)***

(To be completed by the Primary Range Conducting Officer)

5. **Date/Time:** The shoot(s) will commence at *(DTG)* _____ and be completed by *(DTG)* _____.

6. **Range Appointments.** The following personnel have been tasked to fill the appointments listed below.

a. **Shooting Coach(s)** *(NZCF Shooting Coach Course qualified personnel)*:

(1) Rank: _____ Name: _____

(2) Rank: _____ Name: _____

(3) Rank: _____ Name: _____

(4) Rank: _____ Name: _____

b. **Safety Supervisor(s)**

(1) Rank: _____ Name: _____

(2) Rank: _____ Name: _____

(3) Rank: _____ Name: _____

(4) Rank: _____ Name: _____

c. **Ammunition Safety Supervisor:**

(1) Rank: _____ Name: _____

d. **Communications** *(where applicable)*:

(1) Rank: _____ Name: _____

e. **IC Waiting Detail(s):**

(1) Rank: _____ Name: _____

f. **Sentry(s)** *(where applicable)*:

(1) Rank: _____ Name: _____

(2) Rank: _____ Name: _____

g. **First Aider:**

(1) Rank: _____ Name: _____

(2) The Safety Vehicle driver is: _____

(3) The First Aid kit will be uplifted and checked by: _____

7. **Ammunition:** Quantity _____ sub-sonic rounds of ammunition will be required for the shoot(s).

8. **Rifles**: Quantity _____ NZDF .22 rifles issued to the NZCF will be required for the shoot(s).

9. **Range Conducting Officer – Declaration**. I declare that the personnel appointed for this New Zealand Cadet Forces shoot are qualified (for shooting coaches only), qualified and current (for first aider only), competent and suitably experienced, and that all safety requirements have been met as laid down in the above references to this notification.

Signature: _____

Initials, Name: _____

Rank: _____

NZCF 40 Expiry Date: _____

Date: _____

Primary Range Conducting Officer

Signature: _____

Initials, Name: _____

Rank: _____

NZCF 40 Expiry Date: _____

Date: _____

Range Conducting Officer

Signature: _____

Initials, Name: _____

Rank: _____

NZCF 40 Expiry Date: _____

Date: _____

Range Conducting Officer

Signature: _____

Initials, Name: _____

Rank: _____

NZCF 40 Expiry Date: _____

Date: _____

Range Conducting Officer

Part Three – Authorisation by the Cadet Force Training & Support Unit ***(See note 5)***

(To be completed by the AC CFTSU or his/her Representative)

1. I *(Initials, Name)* _____ certify that forms NZCF 11 and 12 (attached) have been received and approved by this CFTSU.

Signature: _____

Service Number: _____

Initials, Name: _____

Rank: _____

Appointment: _____

Date: _____

_____

Part Four – Range Controlling Authority (RCA) Authorisation ***(See note 6)***

(For Range Controlling Authority only)

1. I *(Initials, Name)* _____ of _____ *(RCA)* certify the following:

   a. date this instruction was received by the RCA: _____;

   b. delete the statement that is not-applicable:

      (1) The RCA authorises the conduct of the NZCF shoot as detailed in Parts 1 to 3 of this instruction.

      (2) The RCA does not authorise the conduct of the shoot as detailed in Parts 1 to 3 of this instruction.

   c. date the originator was informed of the RCA approval / non-approval:

      _____.

Signature: _____

Initials, Name: _____

Rank: _____

Appointment: _____

Date: _____

Note(s):

1. This General Range Instruction is to be completed for all Cadet Unit range shoots and is to be submitted to the Area CFTSU along with forms NZCF 11 & 12 within the stated lead times.
2. **Part One** - Is to be completed by the New Zealand Cadet Forces officer holding the appointment of Unit Commander of the unit conducting the shoot, or the New Zealand Cadet Forces Regular Force Officer or Warrant Officer holding the appointment of Area Coordinator, or the New Zealand Cadet Forces Regular Force Senior Non-Commissioned Officer holding the appointment of Senior Area Advisor.
3. Grouping, Zeroing, Application, Smit Trophy, Gunson Cup, Wallingford Cup, Ffennell Comp etc.
4. **Part Two** - Is to be completed by the Range Conducting Officer appointed by the Officer in Charge of the Practice in part one. If more then one Range Conducting Officer is appointed, then all Range Conducting Officers are to include their signature in part two. Only Range Conducting Officers appointed by the Officer in Charge of the Practice in part one are to fulfil the duties of a Range Conducting Officer for this authorised NZCF shoot.

When more than one Range Conducting Officer is appointed by the Officer in Charge of the Practice in part one, the person who is performing the duties of the Range Conducting Officer at any one time is deemed to be the Range Conducting Officer responsible for the conduct and overall safety of the NZCF shoot.

5. **Part Three** - Is to be completed by the Area Co-ordinator or his/her Representative for use of NZDF Ranges. Not required for Civilian Ranges.

6. **Part Four** - For use when the New Zealand Cadet Forces request approval to conduct a shoot on an Army controlled purpose-built range. The range controlling authority is to refer to *DFO(A) Vol 7, Book 1, Chapter 8, Section 4* for rules and procedures regarding New Zealand Cadet Forces use of Army controlled purpose-built ranges.

ANNEX B to Section 3 – Duties of a Range Conducting Officer for a Purpose Built Range Practice

General

1. The RCO is responsible to the OIC of the practice for the detailed planning and conduct of the practice, and for the uplift and return of unit firearms, magazines, bolts and ammunition.

2. The rank and qualification requirements for the RCO of a NZCF purpose built range practice are detailed at Annex A to Section 2 of this part.

Conduct

3. On arrival at the range, the RCO is responsible for:

   a. establishing an ammunition point;

   b. placing out red flags or boards (flags or boards are raised or placed out **30 minutes** prior to shooting taking place);

   c. briefing all safety staff on the practice to be fired with emphasis on range safety;

   d. carrying out safety precautions on all firearms;

   e. briefing all personnel on the practice to be fired with emphasis on range safety; and

   f. briefing all personnel on location of the medical support including the safety vehicle and designated driver.

4. During shooting the RCO is to ensure that any breach of safety is dealt with **immediately**.

5. In the event of an accident, carry out the procedure detailed in para 5.45.

6. Carry out safety precautions as each detail completes the practice.

7. Ensure that the ammunition point is supervised and that only ammunition required for immediate use is allocated to the firers.

8. Ensure that each NZCF 201, Firing Point Register is completed fully when the firer's results have been entered.

9. On completion of the shoot carry out final safety precautions and issue the Range Warning to **ALL** personnel.

10. Ensure that all brass is uplifted and returned to the cadet unit store.

11. Ensure that all remaining live ammunition is returned to the unit storage facility.

12. Ensure that range flags are lowered, danger boards brought in and are returned.

13. Ensure that all target backing boards are patched out (if applicable) and returned to the range shed. Any targets that are broken should be returned to the range warden as soon as possible.

14. Complete a range clearance certificate (if required by the range standing orders).

15. The final task of the RCO is to submit all results to the appropriate headquarters for analysis and retention if required.

ANNEX C to Section 3 – Range Staff

1. In addition to the range conducting officer the following persons are likely to be required at the practice:

a. **Ammunition Safety Supervisor.** The ammunition safety supervisor is responsible for the control and allocation of ammunition throughout the practices. The RCO is responsible for detailing the relevant duties to the appointee (see Appendix 02).

b. **Shooting Coaches.** Shooting coaches, when employed properly, greatly increase the value of the practice by helping individual firers to identify and correct faults. They will also assist the RCO to control the firers, thereby minimising time wastage and helping to prevent any possible safety breaches (see Appendix 01).

c. **Safety Supervisor.** Shooting coaches assume the responsibility of a safety supervisor for small arms purpose built range practices. Every effort is to be made to ensure that safety supervisor responsibilities for a small arms purpose built range practice are carried out by qualified shooting coaches. Officers, warrant officers, senior non-commissioned officers, who are **not** shooting coach qualified, may be appointed as safety supervisors (see Appendix 01).

d. **Medical Assistant.** A medical assistant is to be appointed for all small arms purpose built range practices (see Appendix 03).

e. **Safety Supervisor In Charge of Waiting Details.** When the number of firers participating in the practice creates waiting details, a safety supervisor in charge of waiting details should be appointed. The RCO is responsible for briefing the safety supervisor in charge of waiting details on the nature of the concurrent training to be conducted.

f. **Air Sentry.** An air sentry is to be posted as dictated by range standing orders and the level of air activity in the area (see Appendix 05).

Appendix 01 – Duties of a Safety Supervisor / Shooting Coach for a Purpose Built Range

General

1. The Safety Supervisor is responsible to the RCO for the safety of individual firers.

2. The rank and qualification requirements for the safety supervisor of a small arms purpose built range practice are detailed at Annex A to Section 2.

Duties

3. The duties of the safety supervisor are to be detailed by the range conducting officer before the practice. In outline, the safety supervisor is responsible to the range conducting officer to:

a. attend the Range Conducting Officers range safety staff brief prior to the commencement of the activity;

b. ensure that they carry out all commands as directed by the Range Conducting Officer.

c. ensure that when the Range Conducting Officer is giving commands, all firers they are responsible for, are listening.

d. ensure that the firer has all required personal protective equipment, including firearm type appropriate hearing protection and the hearing protection is worn correctly.

e. qualified New Zealand Cadet Force Shooting Coach safety supervisors are to coach the firer as directed by the Range Conducting Officer. **Non-qualified New Zealand Cadet Force Shooting Coaches are NOT to coach**.

f. qualified New Zealand Cadet Force Shooting Coaches are to ensure they have the New Zealand Cadet Force Shooting Coach Aide Memoire in their possession and are using it to coach correctly.

g. ensure they are in a position to intervene swiftly if safety is about to be breached.

h. qualified New Zealand Cadet Force Shooting Coaches when coaching are to ensure they remain vigilant of their safety supervisor duties.

i. ensure they do not impede the firer.

j. ensure only the correct rifle drills are carried out by the firer.

k. ensure that the firer is firing within the permitted arcs and cone of fire.

l. ensure rifles are unloaded and cleared, as directed by the range conducting officer.

Appendix 02 – Duties of the Ammunition Safety Supervisor

1. Under the direction of the Range Conducting Officer, the ammunition safety supervisor is to position the ammunition point so that it is separated from other range activities. The ammunition safety supervisor is also responsible to the Range Conducting Officer to:

a. ensure that all necessary ammunition is uplifted from the unit storage container at the appropriate time (**officer** only to have access to ammunition container);

b. set up the ammunition point before the commencement of the practice;

c. remain at the ammunition point throughout the practice, unless relieved by another officer, ~~under officer~~ or senior non-commissioned officer who has been appointed by the Range Conducting Officer;

d. maintain an accurate record of all ammunition issued from, and returned to, the ammunition point using the form NZCF 201, Firing Point Register;

e. ensure that ammunition is not opened until their contents are about to be allocated for immediate use;

f. maintain strict control of ammunition allocation to ensure that only ammunition required for immediate use is allocated;

g. ensure that no firearms are brought to the ammunition point;

h. immediately following the practice, supervise the packing of unexpended ammunition and provide the Range Conducting Officer with an **accurate** record of the quantity of ammunition expended and the quantity of ammunition to be returned; and

i. assist the Range Conducting Officer to return unexpended ammunition if required.

Appendix 03 – Duties of the Medical Person

1. Under the direction of the Range Conducting Officer, the medical person is to position the first aid point so that it is separated from other range activities. The medical person is also responsible to the Range Conducting Officer to:

a. ensure that the first aid kit used for the range activity is checked and all items have not expired. The recommended contents for the First Aid Kit can be found at Cadet Force Orders, Volume 7, Chapter 3, Annex B;

b. set up the first aid point before the commencement of the practice;

c. remain at the first point throughout the practice, unless relieved by another qualified and **current** first aider who has been appointed by the Range Conducting Officer only; and

d. maintain an accurate record of any injuries sustained by any person involved during the range practice.

Appendix 04 – Duties of the IC Waiting Detail

1. Under the direction of the Range Conducting Officer, the IC Waiting Details is to supervise the details waiting to shoot. The IC Waiting Details is also responsible to the Range Conducting Officer to:

a. ensure that the next firing detail is ready to move onto the firing point when called to do so by the Range Conducting Officer;

b. carry out any concurrent training as detailed by the Range Conducting Officer;

c. ensure that the next firing detail observes the practice; and

d. maintains control over the next firing detail.

Appendix 05 – Duties of the Air Sentries

2. Under the direction of the Range Conducting Officer, the air sentries are to be posted as directed by range standing orders and the level of air activity in the area. They are responsible to the RCO to:

a. alert the Range Conducting Officer to any aircraft about to encroach into the range area.

Note: Air Sentries are only required if Range Standing Orders dictates.

ANNEX D to Section 3 – Range Appointment Holders Brief

1. This brief is to be delivered to all range appointment holders detailing their responsibilities and duties prior to and during the range practice. It is to be delivered at a **minimum** of 24 hours prior to the range practice.

- **Assistant RCO duties:**

_____

_____

_____

_____

_____

_____

- **Ammunition Safety Supervisor duties:**

_____

_____

_____

_____

_____

_____

- **Shooting Coach duties:**

_____

_____

_____

_____

_____

_____

- **Safety Supervisor duties:**

_____

_____

_____

_____

_____

_____

_____

- **IC Waiting detail duties:**

_____

_____

_____

_____

_____

_____

- **Medic duties:**

_____

_____

_____

_____

_____

_____

- **Safety Vehicle Driver duties:**

_____

_____

_____

_____

_____

_____

Do you have any questions?

ANNEX E to Section 3 – Participants Range Safety Brief

1. This brief is to be delivered to **all** participants on their arrival to the range. It is to be delivered prior to the start of the range practice.

Introduction

a. Good morning/afternoon and welcome to the _____ Range. My name is _____ and I am the Range Conducting Officer for todays practice.

Range Appointments

b. To assist me on the range today I have the following personnel:

- Assistant RCO(s): _____
  _____
  _____
- Ammunition Safety Supervisor: _____
- Shooting Coach(s): _____
  _____
  _____
  _____
  _____
  _____
- Safety Supervisor(s): _____
  _____
  _____
  _____
  _____
  _____
- IC Waiting detail(s): _____
- Medic: _____

- Safety Vehicle Driver: _____

Range Layout

c. The following are the key areas of the range:

- Centre of arc: **Centre of your target**_____
- Left of arc: **Left hand edge of your target**_____
- Right of arc: **Right hand edge of your target**_____
- Admin / briefing area: _____
- Location of safety vehicle: _____
- Location of medic: _____
- Ammunition point: _____
- Range flags, boards or lights: _____
- Waiting area: _____
- Toilets: _____
- Concurrent activity area: _____
- Hand Washing facilities: _____

Aim of the Range Practice

d. The aim of todays range practice is to:

_____

_____

_____

_____

_____

Conduct / General Outline / Sequence of Events

e. The range practice will consist of the following:

- _____
- _____

- _____
- _____
- _____
- _____
- _____

Are there any questions so far

Range Safety Procedures

a. The following are the range safety points that are to be adhered to:

- **Signal to cease firing:**
  - The command to cease firing is **"STOP"** or a **"Whistle Blast"**. On that command you are to stop firing, attempt to apply safety catches, lay rifles down, keep hands clear of the rifle and await further instructions.
- **Event of an Intrusion onto the Range:**
  - In the event of an intrusion of persons, vehicles, aircraft or animal you will get the command to **"Stop"** or a **"Whistle Blast"**. You are to carry out the actions as for cease firing. **Any** person on the range, when upon seeing any incident or accident or intrusion about to occur is to call **"STOP"**.

Procedure Following an Accident on the Firing Point

b. In the event of an ammunition accident the following procedure is to be used, and any other action that may assist any subsequent investigation should be taken. The procedures are:

- **On Site Action.** The Officer In Charge or the Range Conducting Officer (or next senior person in the event of death or injury) is to:
  - Immediately stop the practice; clear firearms not involved and remove all personnel from the firing point;
  - First aid is to be given to the injured ASAP and an ambulance will be requested, the phone number is 111;
  - Ensure that the rifle involved and all fragments are left untouched and that no attempt is made to clean them or coat them with any preservative;
  - Inform the NZ Police;
  - The COMDT NZCF will be advised through the Area Coordinator ASAP; and
  - A written report will be supplied to the AC within 24hrs.

Note: The Accident Procedures contained in the appropriate Range Standing Orders for the range being used, are to be followed and take priority over the above procedures.

Safety Rules

c. The following safety rules are to be adhered to at all times:

- Hearing protection is to be worn at all time whilst on the firing point.
- No one is to leave the range without the RCO's permission.

- Firearms safety rules:
  - Rifles are to be pointed down the range at all times.
  - Rifles are only to be loaded on the RCO's command.
  - Whenever picking up a rifle, ensure you clear it.
  - When rifles are not in use, the Chamber Safety Device is to be inserted.

Are there any questions?

RANGE WARNING

"YOU ARE NOT TO LEAVE THE RANGE OR TRAINING AREA WITH ANY AMMUNITION OR AMMUNITION PRODUCE IN YOUR POSSESSION WITHOUT PROPER AUTHORITY. IF YOU HAVE NOW OR LATER DISCOVER ANY IN YOUR POSSESSION, YOU ARE TO IMMEDIATELY HAND IT OVER TO A SUPERIOR OFFICER. CONDUCT YOUR FINAL CHECK. YOU HAVE BEEN WARNED."

ANNEX F to Section 3 – NZCF 201, Firing Point Register

NEW ZEALAND CADET FORCES

NZCF 201Serial No: **05 / 13**

FIRING POINT REGISTER

Range at: **Royal Tiger Range** Unit: **City Of Mangakino Cadet Unit**

Firearm: **Marlin Model-XT** Date: **28 September 2013**

Type of Shoot: **Inter-Unit Competition Shoot**

Firers Rank	Firers **Full Initials** & **Surname**	Type of Practice **Group** Range **25 mtrs**	Type of Practice **App** Range **25 mtrs**	Type of Practice **App** Range **25 mtrs**	Type of Practice **App** Range **25 mtrs**	Type of Practice **Snap** Range **25 mtrs**	Firers Total Score **HPS: 125**	**Ammo Expended**
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
CDTWO2	N.D. Matty	25	25	25	25	25	125	25
CDTSSGT	D.E. Billy-Bob	15	24	23	15	10	87	25
CDTCPL	A.S. David	20	13	19	19	17	88	25
CDTLCPL	P.Q. Jessop	15	12	12	19	20	78	25
CDT	M.Y. Privates	20	25	24	21	23	113	25
CDT	H.R. Billy-Bob	15	15	19	21	22	92	25
CDTCPL	O.J. Training	20	24	21	20	19	104	25
CDTCPL	D.F. Targets	15	9	12	16	17	69	25
CDTLCPL	P. Henry	15	23	24	19	17	98	25
CDT	L. Jessop	15	12	22	19	18	86	25
CDT	L.E. Private	25	21	24	21	24	115	25
CDT	P.E. Teacher	15	19	16	17	19	86	25

RCO Inits & Name:	CAPT S.D Shooter	**TOTAL ROUNDS HELD BY UNIT: (A)**	**2900**
RCO Signature:	S.D. Shooter	Rounds Issued from Unit Store for Shoot: **(B)**	450
	(Range Conducting Officer)	Total Rounds Fired for the Shoot: **(C)**	300
NZCF 40 Number:	1321	Damaged Rounds to be Returned to Area Office: **(D)**	0
		Serviceable Rounds Returned to Unit Store after Shoot: **(E)**	150
NZCF 40 Expiry:	12 March 2019	*(B - C - D = E)*	
		Updated Total Serviceable Rounds Held By Unit: (F) *(A - B - C + E + C = F)*	**2600**

Explanatory Notes on Compiling the NZCF 201

1. The NZCF 201, Firing Point Register can be filled out by the Ammunition Officer, UO or SNCO, however the RCO who is conducting the range practice on the day **is to** check the **accuracy** and **sign** the NZCF 201 at the end of the practice.

NZCF 201 Serial No:

The sequential number of practices held in that year e.g. **03/13** = 3rd shoot for 2013. If a NZCF 201 comprises more than one page all pages have the same Serial Number.

Range at:

The name of the range the practice is being conducted on/at.

Type of Shoot:

Type of shoot the unit is conducting e.g. Smit Trophy, Gunson Cup, Wallingford Cup, Ffennell Competition, Inter-unit Competition Shoot, Shooting Team Practice etc.

Firers Rank:

This is important for the issuing of any badges or prizes i.e. Marksman Badge or Ffennell Competition Medallions etc.

Firers Full Initials & Surname:

This is important for the issuing of any badges or prizes i.e. Marksman Badge or Ffennell Competition Medallions etc.

Type of Practice:

Insert the type of practice i.e. Grouping, Zeroing, Application or Snap.

Range:

The length of range being fired on. (**Note:** The NZCF 40 qualifies holders to conduct NZCF Unit Range Practices on approved ranges with NZDF issued .22 rifles only out to 25 metres or 27 yards.

Firers Total Score:

The total score for all practices are inserted in this column for each firer.

HPS:

The Highest Possible Score a firer can attain for the shoot can be inserted here i.e. **HPS** 100 for the Smit, Gunson and Wallingford shoots.

Ammo Expended:

The total number of rounds fired by each firer **including** any sighters fired.

Total Rounds Held by Unit:

The **total** number of live rounds currently held in the Units Stock.

Rounds Issued from Unit Store for the Shoot:

The **total** amount of rounds issued to the RCO for the Shoot.

Total Rounds Fired for the Shoot:

The total number of rounds expended down range for the shoot.

Damaged Rounds:

The total number of **damaged** rounds returned to the Area Office. **Do Not** include these rounds in the **"Updated Total Rounds Held by Unit"**.

Rounds Returned to Unit Store after Shoot:

Total number of rounds returned to the Unit Store after the Shoot i.e. ***rounds issued from unit store for shoot*** minus ***total rounds fired for the shoot*** minus ***damaged rounds*** equals ***rounds returned to the unit store after shoot***.

Updated Total Rounds Held by Unit:

The units' total stock of ammunition remaining after the range shoot i.e. ***total rounds held by unit*** minus ***total rounds fired for the shoot*** plus ***Rounds Returned to Unit Store after Shoot*** plus ***total rounds fired for the shoot*** equals ***updated total rounds held by unit***.

RSO Initials and Name:

The Initials and Name of the qualified RCO who conducted the range shoot are to be written in BLOCK LETTERS for ease of identification by the Area Office.

RSO Signature:

The RCO signs their name.

NZCF 40 Number:

The RCOs NZCF 40 Number is written here.

Note: The NZCF 201 is to have **NO** empty lines between firing details and all unused lines **ARE** to be ruled off, as per the example NZCF 201 above.

ANNEX G to Section 3 – Rifle Serviceability Check

1. Rifles **are** to be inspected for serviceability prior to being used on the range & for training. The RCO is to ensure the following points **are** checked:

Rifle Serial Numbers

	☐	☐	☐	☐	☐	☐

The Serial Numbers must correspond on the:

- Rifle and bolt ☐ ☐ ☐ ☐ ☐ ☐

Check the Foresight for:

- Damage and security ☐ ☐ ☐ ☐ ☐ ☐

Check the Bolt & Bolt Handle for the following:

- The extractor is secure and **clean** ☐ ☐ ☐ ☐ ☐ ☐
- The bolt handle for cracks & looseness ☐ ☐ ☐ ☐ ☐ ☐

Check the Williams WGRS-54 Peep Sight:

- For any damage ☐ ☐ ☐ ☐ ☐ ☐
- **All** locking screws are present & secure ☐ ☐ ☐ ☐ ☐ ☐

Check the Barrel, Chamber and Bore for:

- Cleanliness ☐ ☐ ☐ ☐ ☐ ☐
- Carbon deposits ☐ ☐ ☐ ☐ ☐ ☐
- Pitting of the barrel (inside the bore) ☐ ☐ ☐ ☐ ☐ ☐
- The ejector for damage ☐ ☐ ☐ ☐ ☐ ☐
- Damage to the rifling ☐ ☐ ☐ ☐ ☐ ☐
- Trigger assembly mounting screws are secure ☐ ☐ ☐ ☐ ☐ ☐

Check the Stock for:

- The sling swivel studs are not damaged ☐ ☐ ☐ ☐ ☐ ☐
- Cracks or splits ☐ ☐ ☐ ☐ ☐ ☐
- Butt plate for security and damage ☐ ☐ ☐ ☐ ☐ ☐

Check the Safety Catch *(Functions Test)*:

- Safety catch functions and is not worn or broken ☐ ☐ ☐ ☐ ☐ ☐
- Safety catch locks in each position, safe and fire ☐ ☐ ☐ ☐ ☐ ☐
- The trigger release functions correctly ☐ ☐ ☐ ☐ ☐ ☐

ANNEX H to Section 3 – Post Practice Administration

On Completion of the Range Practice

1. On completion of the range practice the RCO is to:

   a. ensure that all brass is picked up and placed in the appropriate container (RNZAF ranges) or picked up and returned to the unit store (Army ranges) or left where it is (civilian Indoor ranges);

   b. ensure that all remaining live ammunition **is** accounted for and returned to the unit ammunition storage container;

   c. ensure that range flags are lowered and/or danger boards are returned (Military ranges) or the lights are switched off (Indoor ranges).

   d. ensure that all military targets that were used as backing boards are patched out on **both** sides and returned to the range shed. Any targets that are broken should be returned to the range warden as soon as possible; and

   e. complete the range clearance certificate (if required by the Range Standing Orders).

   f. carry out final inspection of the range; and

   g. issue the **Range Warning** to all participants;

2. The final task of the RCO is to submit a copy of the NZCF 201, Firing Point Register to the Area CFTSU within **7 days** of the completion of the shoot.

Range Warning

3. The following warning is to be given by the Range Conducting Officer to **all** participants, spectators and range/safety staff after all ammunition and range produce has been handed in:

RANGE WARNING

"You Are Not To Leave The Range Or Training Area With Any Ammunition Or Ammunition Produce In Your Possession Without Proper Authority. If You Have Now, Or Later Discover Any In Your Possession, You Are To Immediately Hand It Over To A Superior Officer. Conduct Your Final Check.
You Have Been Warned."

Note: DO NOT try and memorise this Range Warning. You **ARE** to read it word for word.

SECTION 4 – Scoring of Targets for Cadet Unit Range Shoots

Shooting Practices

5.57 All cadet unit shooting competitions and unit range practices will use the 5A Facing targets which are available on SRM through their Cadet Force Training and Support Units. The following practices can be fired and are scored as follows:

a. **Grouping Practice.** Although the Grouping Practice is **not** part of the national or international shooting competitions, cadet units can, when conducting their own range shoots or competitions between cadet units, conduct a grouping practice. A standard grouping ring (see Fig 85) will be used and scoring is as follows:

(1) 1 inch group = 25 points (all 5 rounds must be contained within the Green circle)

(2) 2 inch group = 20 points (all 5 rounds must be contained within the Blue circle)

(3) 3 inch group = 15 points (all 5 rounds must be contained within the Red circle)

b. **Application / Deliberate Practice.** Whether the Application / Deliberate practice follows a grouping practice or not, the scoring of the targets will be as follows:

(1) Bulls-eye: 5 points

(2) Inner: 4 points

(3) Magpie: 3 points

(4) Outer: 2 points

c. **Snap Shooting.** Snap Shooting will be scored as per sub-para b.

5.58 **Inwards/Outwards Gauging.** Unit RCOs can either use Inwards or Outwards Gauging to score targets. For accuracy, the use of a .22-inch plug gauge can be used. The following is an explanation on the difference between inwards and outwards gauging:

a. **Inwards Gauging.** When the flange of the gauge touches a line nearer the centre (of the target) the higher value will be credited; and

b. **Outwards Gauging.** When the flange touches the outside of the line the lower value will be credited.

5.59 It is entirely up to the Unit RCO as to which method is used when scoring targets. If it is a competition shoot between units then all units are to agree on which method for scoring the targets is used.

5.60 Below is an example of how targets are scored in relation to Inwards and Outwards gauging. Using *inwards* gauging the green bullet is worth 5 points. If using *outwards* gauging then the green bullet is worth 4 points.

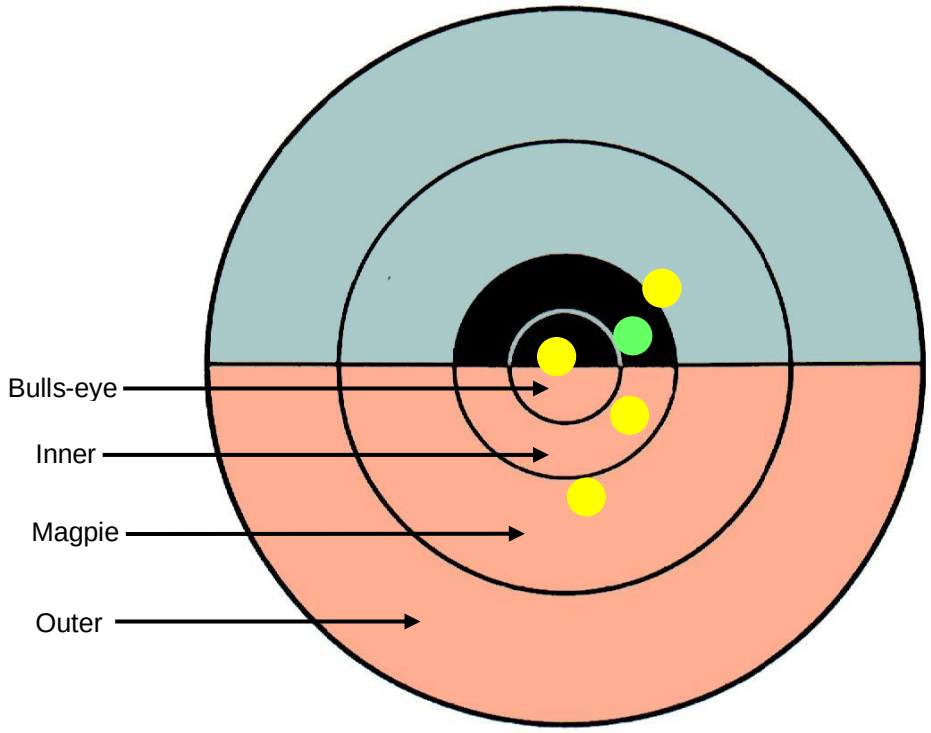


Fig 82 - Inwards and outwards gauging

5.61 Cadet unit RCOs are **not** to use gauges or interfere with the shot holes when scoring their targets for the National and International competition shoots.

5.62 **How to Use the Grouping Ring.** The Grouping Ring is used as follows:

a. Mark the MPI of the group; and

b. Place the centre of the Grouping Ring on the MPI.

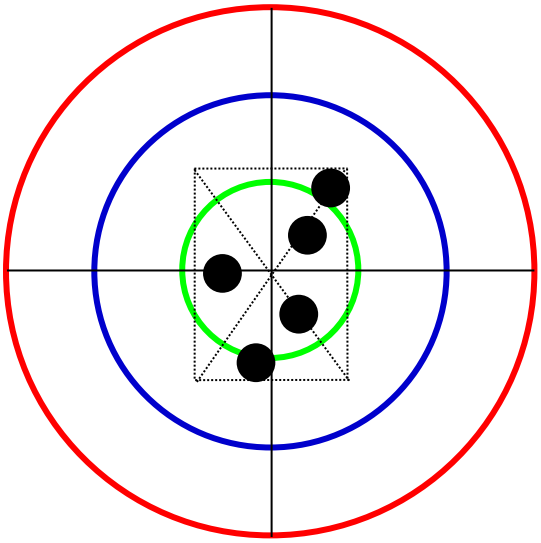


Fig 83 - How to use the grouping ring (not to scale)

5.63 Using the Grouping Ring and the bullet holes from the above example, the group that has been fired is worth 20 points, as all five rounds fit into the Blue 2 inch circle.

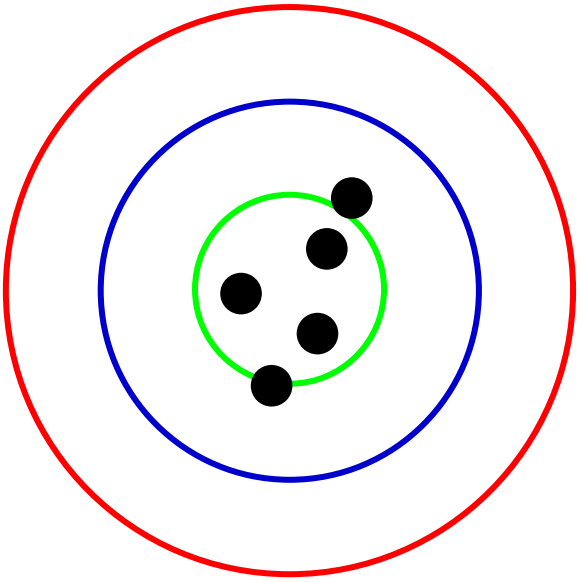
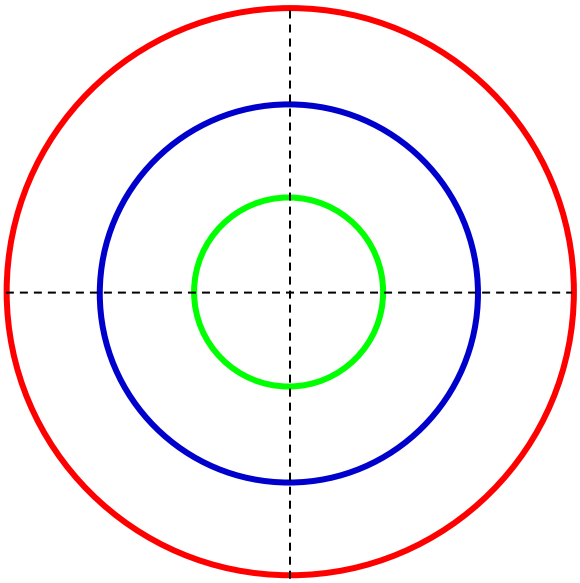


Fig 84 - Scoring with the grouping ring

Note: Figures 83 & 84 are drawn to scale.

Grouping Ring



This Grouping Ring is drawn to scale and can be printed onto an overhead transparency or etched onto a piece of clear perspex.

Fig 85 - The Grouping Ring

SECTION 5 – Range Conducting Officer & Shooting Coach Instructor Appointments

5.64 A succession pathway has been created for NZCF Officers. As part of this pathway, **selected** officers will be required to instruct on the Range Conducting Officer and Shooting Coach courses. The following paragraphs lay out the pathway for NZCF officers prior to receiving a Warrant of Appointment as an instructor.

Shooting Coach Course Instructor

5.65 Consideration will be given to NZCF Officers who have met the pre-requisites, and:

a. have qualified on the Shooting Coach course;

b. have planned and conducted a minimum of **six** cadet unit range shoots since qualifying on the RCO course;

c. have qualified on the Instructional Technique & Training Management course;

d. have been recommended by the CUCDR to becoming a Shooting Coach course Instructor; and

e. have been approved by the Area Coordinator to becoming a Shooting Coach course Instructor.

Range Conducting Officer Course Instructor

5.66 Consideration will be given to NZCF Officers who have met the pre-requisites, and:

a. have qualified on the Range Conducting Officer course;

b. have planned and conducted a minimum of **six** cadet unit range shoots since qualifying on the Range Conducting Officer course;

c. have qualified on the Instructional Technique & Training Management course;

d. have been recommended by the CUCDR to becoming a Range Conducting Officer course Instructor; and

e. have been approved by the Area Coordinator to becoming a Range Conducting Officer course Instructor.

5.67 For more information see Cadet Force Orders, Volume 7, Chapter 3 – Firearms, Section 1 – Firearms Training.

NZCF 40, Course / Activities Warrant

5.68 On completion of the requirements found in the above reference, the NZCF Officer will be issued with the appropriate Warrant of Appointment.

NEW ZEALAND CADET FORCES
COURSE / ACTIVITIES WARRANT

Photo of Holder

Holders Service Number

Holders Initials & Name

Issuers Appointment

Date of Expiry

The holder is to ensure that they are cognisant with the conditions for retention of this warrant as specified in Cadet Force Orders.

Front

The holder of this NZCF Warrant Card is authorised to only Instruct, Conduct, Coach & Command the NZCF Courses / Activities selected below.

☐ **Range Conducting Officer**
Oual Date: XXXXXXXXX

☐ **Range Conducting Officer Instructor**
Date Appointed: XXXXXXXXX

☐ **Shooting Coach**
Oual Date: XXXXXXXXX

☐ **Shooting Coach Instructor**
Date Appointed: XXXXXXXXX

☐ **Marine Safety Officer**
Oual Date: XXXXXXXXX

☐ **Bushcraft**
Qual Date: XXXXXXXXX

☐ **Fieldcraft**
Oual Date: XXXXXXXXX

In accordance with Section 3(1)(2)(a)(i) of the Arms Act 1983, a member of the NZDF and/or NZCF in the course of their Range Conducting Officer duties may lawfully carry or have in their possession NZDF issued .22 firearms and/or ammunition.

Back

Fig 86 - Example of NZCF 40, Course / Activities Warrant

PART 6 – Shooting Coaching

SECTION 1 – Abbreviations

6.1 The following are some of the abbreviations used in this Part:

a.	ammo	ammunition
b.	cal	calibre
c.	CZP	Correct Zero Position
d.	ES	Extreme Spread
e.	ESA	Effective Scoring Area
f.	Fig	Figure
g.	GC	Grouping Capacity
h.	mtrs	metre(s)
i.	mm	millimetre(s)
j.	MPI	Mean Point of Impact
k.	POA	Point of Aim
l.	RCO	Range Conducting Officer
m.	rd(s)	round(s)
n.	PSI	Pounds per Square Inch

SECTION 2 – Glossary of Terms

Action: The 'action' is the term applied to the assembly of component parts that carry out the necessary cycle of operations in small arms and machine guns.

Accuracy: The measure of a weapons ability to consistently form groups of a proven or specified size and in a consistent relationship to the point of aim. A firer's capacity is directly affected by the potential of the weapon to perform accurately and consistently. The term *accurate* is relative to type, and a weapon incapable of the expected performance is called erratic.

Ammunition: (Small Arms). Small arms ammunition refers to all types of ammunition used in pistols, rifles, revolvers, carbines, light support weapons, sub-machine guns, sub-calibre devices and training aids with a calibre of less than 20mm.

Applied Safety: Applied safety refers to a safety device actuated by the firer. When applied it ensures that the weapon cannot be fired accidentally, for example a safety catch or lever.

Blowback Operation: Blowback operation is the principle of operation employed in some sub-machine-guns. When the cartridge is fired the gas expands and exerts pressure in all directions, but only the bullet and the case, supported by the breechblock are free to move. The bullet being much lighter than the block accelerates more rapidly and leaves the bore before the block has moved far. Short barrels are used to release the bullet early and allow the pressure to drop before the case has moved clear of the chamber. The forces are so balanced that the block moves only a short distance while the bullet is in the bore but acquires sufficient energy to complete the backward action aided by residual pressure after the bullet has left.

Bore: The bore is the interior of a weapon barrel through which the projectile passes. The bore diameter in a rifle barrel is measured across the lands.

Breech: The breech of a weapon is the pressure resistant metal casing surrounding and behind the chamber.

Breech Block or Bolt: The breechblock or bolt is the component of a weapon that supports the base of the round while it is chambered, fired, and extracted.

Bullets: A bullet is a single projectile.

Calibre: The calibre is the nominal diameter of the bore, often modified to show the date of adoption (30-06) or the designer (.257 Roberts). Dimensions of the lands and grooves in different barrels of a given calibre are not necessarily the same but will average to have approximately the same bore area in cross section.

Cant: Cant occurs when the sights are at any angle other than vertical.

Cartridge: A cartridge is an assembled round of ammunition in ready to fire form. Designation of sporting rifle cartridges often appears confusing because different means of identification are employed by manufacturers. Following are some examples of cartridge designation and markings, with brief explanations:

a.	45-70-500	Cal - 45-in. Charge weight - 70 grains and the bullet weight = 500-gr.
b.	.38-40	Calibre followed by charge weight.
c.	.250-3000	Calibre and velocity.
d.	.35 Remington	Calibre and manufacturer.
e.	.30-06	Calibre and date of adoption as a military ammunition.
f.	.22 Hornet	Calibre and "fancy" name for cartridge.
g.	.45 ACT	Calibre and Auto Colt Pistol.
h.	7 x 57	Continental System indicating calibre and length of the case in millimetres.

Cartridge Headspace: Cartridge headspace is the distance from the face of the bolt or breechblock, when locked, to the cartridge seating of the chamber. Rimmed ammunition - from the bolt of the breechblock face to the breech face of the chamber. Rimless, from the bolt or breechblock face to the shoulder of the chamber. When the headspace is within tolerances specified the functions of expansion, obturation and primary extraction occur without problem. If the headspace is incorrect severe damage to the rifle and/or injury to the firer can occur. The pressure in the chamber for a .22 calibre long rifle upon firing can be as much as 24,000 lb per square inch (lb/in^2 = PSI).

Chamber: The chamber is an enlarged recess in the rear end of the barrel that receives the cartridge.

Closed Bolt: Weapons that fire from a closed bolt position have a round locked in the chamber before the trigger is pressed (see Open Bolt).

Cocking: Cocking is the mechanical process carried out to bring the action of a weapon into a condition in which it is ready to fire.

Correct Zero Position: The correct zero position is the technically correct location for the mean point of impact of a zeroed weapon. The correct zero position differs from the point of aim when the sight setting does not reflect the true range.

Culminating Point: The culminating point is the highest point to which the bullet rises above the line of sight during its flight (trajectory).

Effective Scoring Area: A firer's grouping capacity or estimated grouping capacity centered on the target.

Ejection: Ejection is the process of expelling an empty case from the body of a weapon when the round has been expended.

Extraction: Extraction is the withdrawal of an empty case from the chamber.

Extreme Spread: Extreme spread is the term applied to the distance between the most distant effective shots of a group. Measurement is from outside to outside of shot holes.

Group: A group is the pattern of shots formed by a series of no less than three rounds, fired at the same point of aim, observing the four marksmanship principles.

Grouping Capacity: A firer's average, proven grouping capacity at any range.

Grooves: Grooves are the common name for the channeling, which forms the depressions between the lands in the bore of the weapon.

Hang fire: A hang fire is defined as any perceptible delay between initiation of the cap and the propellant. A hang fire is to be classified as a failure.

Inspection: An inspection of small arms is a visual inspection using gauges issued to unit tradesmen. It ensures that weapons are maintained in good condition and those necessary repairs, adjustments, and authorised modifications have been carried out.

Jump: The term jump refers to the deflection of the muzzle above or below the barrel axis at the moment of shot departure. When the line of departure of the bullet is above the barrel, the jump is positive, if below, it is negative.

Lands: Lands are the ridges of the rifling that project between the grooves inside the bore of a Weapon.

Line of Sight: Line of sight refers to a straight line passing through the sights to the point of aim on the target.

Line of Departure: The line of departure is a straight line along which the bullet travels at the moment of leaving the muzzle. This line is at an angle to the line of sight, and will change according to the range at which the target is being engaged.

Mean Point of Impact: The centre of a group.

Muzzle Velocity: The speed of the projectile the moment it leaves the barrel.

Propellant: Propellant is an explosion, which by its regularity of burning produces moderately high and sustained gas pressure in the bore of a gun thereby accelerating the projectile.

Recoil: The gases generated by the explosion of the propellant charge exert a force equally in all directions, moving the bullet along the bore and exerting equal force rearwards against the empty cartridge case and locked breech - producing a tendency for the weapon to move rearwards, or recoil. A small increase in this recoil effect occurs as the bullet leaves the muzzle because the gases, suddenly released, leave the barrel at a rapidly increased velocity and have a rocket like effect on the weapon.

Rifling: Rifling is the spiral grooves cut in the interior surface of a barrel from a little forward of the chamber to the muzzle. Although the engineering design of rifling varies, its common purpose is to spin a projectile at a rate predetermined to provide stability in flight. The spin rate imparted to a projectile at the muzzle is constant throughout its flight (see Lands and Grooves).

Small Arm: A small arm is defined as a weapon that is generally easily portable and fires a flat trajectory projectile. Normally small arms are considered to have calibres of 20-mm or less.

Supported: When adopting a fire position the firer is said to be supported if any portion of the body or weapon are in contact with any object, which is inorganic to the body or fitted equipment. Slings, magazines, web equipment, and elbows rested on knees **do not** constitute a support.

Trajectory: Trajectory is the curved flight path of a projectile between the muzzle and the target.

SECTION 3 – Introduction to Small Arms Coaching

The Aim of Coaching

6.2 The aim of coaching is to improve the cadets shooting technique and knowledge to such a degree that the cadet has the confidence and the ability to use the .22 rifles effectively.

The Basic Elements

6.3 Any shooting performance represents the collective capability of the rifle, ammunition and the cadet. Before the contribution of the cadet can be determined, the capabilities of the rifle and ammunition must be known. The shooting coach must be familiar with the procedures that extract maximum value from the co-ordination of these three basic elements, which are the ammunition, firearm quality and the cadet.

6.4 We will look at each element in detail:

a. **Ammunition.** Each batch of ammunition purchased by the Defence Force is factory tested as capable of firing a group, the exception being the .22 ammunition. However the .22-inch Rimfire Match Round will consistently put every shot into a 1-inch bull's eye at 100 yards;

b. **Firearm Quality.** Unlike ammunition, there are many variables associated with small arms rifles, which the shooting coach has some control over. Any rifle that consistently has misfires should be thoroughly checked by an armourer. This will eliminate the possibility that a bad shooting performance is caused by the rifle and will allow attention be focused on the firer's application of the marksmanship principles; and

c. **The Cadet.** The cadet is the major contributor to the variables of the firing process. Each new group of cadet firers will bring problems of poor eyesight, lack of co-ordination, left and right handed firers with opposite dominant eyes and varying degrees of prior experience. It is useful to identify these traits before the start of marksmanship training and allocate additional attention to those cadets who exhibit indications that they have potential physical shooting problems.

The Shooting Coach

6.5 The successful shooting coach must thoroughly understand all the steps of the shooting system and the techniques required to effectively engage targets.

6.6 There are six desirable attributes of a shooting coach and these attributes are:

a. **Knowledge.** Coaches should continually strive to increase their level of knowledge of small arms matters so as to be prepared to readily and accurately answer questions regarding firearms training;

b. **Patience.** Coaches will encounter many firers who will test their patience. All cadets must be coached with calm, persistent and patience. The cadets must be persuaded

through demonstration and repetition that the principles and procedures of the shooting system are effective;

c. **Levels of Personal Skill.** Some individuals claim to be able to coach a skill, which they are unable to demonstrate themselves. The credibility of such a coach will always remain in doubt. A demonstrated high level of skill in all aspects of firearms training will provide a yardstick on which cadets can measure and improve their own performance;

d. **Alertness.** The coach must always:

(1) Be on the alert for mistakes in the application of the marksmanship principles and unsatisfactory performances by the cadets.

(2) Insist on compliance with range safety regulations, firearms handling safety requirements.

(3) Develop an ability to observe the actions of the firer quickly and accurately and give sound recommendations to correct mistakes before skills deteriorate and loss of confidence can occur.

e. **Helpful Attitude.** Most cadets, even those who do not shoot well, enjoy shooting and start out with a lively interest in their range work. The coach assigned to a cadet will automatically be classified by the individual as a technical expert and authority on shooting. The coach should retain and reciprocate this respect that has been spontaneously extended by the student. A thorough knowledge of the subject, an honest helpful approach, and a quiet confident manner will motivate and encourage the cadet. A blustering attitude, creating an air of mystery around basic principles, abusing a cadet in front of others, or use of profane language, will create resentment and will not improve the firer's performance. Only in cases of repeated carelessness with respect to safety or clearly described, achievable outcomes; is an overly authoritarian manner required; and

f. **Maintenance of Standards.** By insisting on high standards of marksmanship, rifle handling, rifle maintenance, and range discipline, the shooting coach plays an extremely effective role in the cadet unit. Visibility improved results will foster confidence and raise the cadet's morale. On the other hand, the results which well trained cadets produce will reward the coach in terms of confidence, self respect and satisfaction in a job well done.

Employment of Coaches

6.7 Wherever possible, one coach should be assigned to each firer. If the number of coaches available is insufficient to provide this ratio, responsibility should be divided among the coaches available.

6.8 To best serve the interests of the development of good shooting habits, the best coaches should be assigned to the flank firers with less experienced coaches assigned to the centre of the detail under the eye of the RCO.

6.9 Although many coaching attributes are directly related to desirable officer attributes, it is not essential that a shooting coach have officer status. Senior cadets or equivalents who have qualified on the NZCF Shooting Coaches course should be utilised to maximum effect during all range practices. The supervision of coaches by RCO's and others should be constructive and any correction of coaches should be conducted **away** from the firers to maintain credibility.

Causes of Poor Shooting

6.10 The causes of poor shooting can be categorised into two parts, which are as follows:

a. Those causes **within** the firers' control:

(1) Failure to apply the marksmanship principles.

(a) Has the cadet achieved training standards?

(b) Is the performance a reaction to poor coaching?

(c) Is available dry training time on range being utilised?

(2) Failure to properly prepare the rifle for firing.

(a) Is the cadet aware of the standards?

(b) Has adequate time been made available?

(3) Lack of determination and concentration.

(a) Is there a training issue?

(b) Is there a medical issue?

b. Those causes **outside** the firers' control:

(1) The weather.

(a) Is an alternate means possible?

(b) Is exposure minimised, achievement rewarded?

(2) Physical limitations.

(a) Does the firer have the physical ability to conform?

(3) Bad range organisation.

(4) An ineffective coach.

SECTION 4 – The Theory of Small Arms Fire

The Firing of a Round

6.1 The following is a sequence of events as to what happens during the firing of a .22 round:

a. the firing pin strikes the rim of the round igniting the priming mixture;

b. the priming mixture then ignites the propellant powder; and

c. the propellant powder then explodes into gasses, which expands the cartridge case in the chamber to form an airtight lock (rearward obturation) and forces the bullet into the barrel where it is controlled by the lands and grooves of the rifling as it moves forward.

Rifling

6.2 The rifling in the Marlin Model-XT is made up of sixteen lands and grooves with a right hand twist. The barrel length is approx 55.88cm.

Jump

6.3 Jump is the vertical movement of the barrel caused by the following:

a. the explosion in the breech; and

b. shock waves created by the sonic boom from the bullet as it moves down the barrel.

6.4 The following are the factors that influence jump:

a. resting the rifle on or against the support; and

b. to a much lesser degree, body position.

Recoil

6.5 Recoil is the rearward movement of the rifle, which is the result of two factors, which are;

a. the explosion of the round in the breech; and

b. the violent rush of escaping gas as the bullet leaves the muzzle.

6.6 Recoil does not significantly affect the path of the bullet.

THE THEORY OF SMALL ARMS FIRE

Trajectory

6.7 As soon as the bullet leaves the muzzle, it meets air resistance. In addition to air resistance, gravity will pull the bullet down. The bullet therefore has a curved path from the muzzle to the target. As the air pressure continually slows the bullet, gravity affects it more. Therefore the bullet path curve is continually increasing downwards. This curve is called the Trajectory.

Culminating Point

6.8 The culminating point is the highest point above the muzzle that a bullet reaches along its trajectory. It occurs just over halfway.

Line of Sight/Departure

6.9 Line of sight/departure is an imaginary straight line from the eye of the firer through the sight to the point of aim. The line of departure is the line of the barrel at which angle the bullet must leave to hit the target.

Point of Impact

6.10 The point of impact marks the end of the bullets trajectory. If the firer is using the marksmanship principles and the rifle is zeroed, the point of impact will be on or near the point of aim.

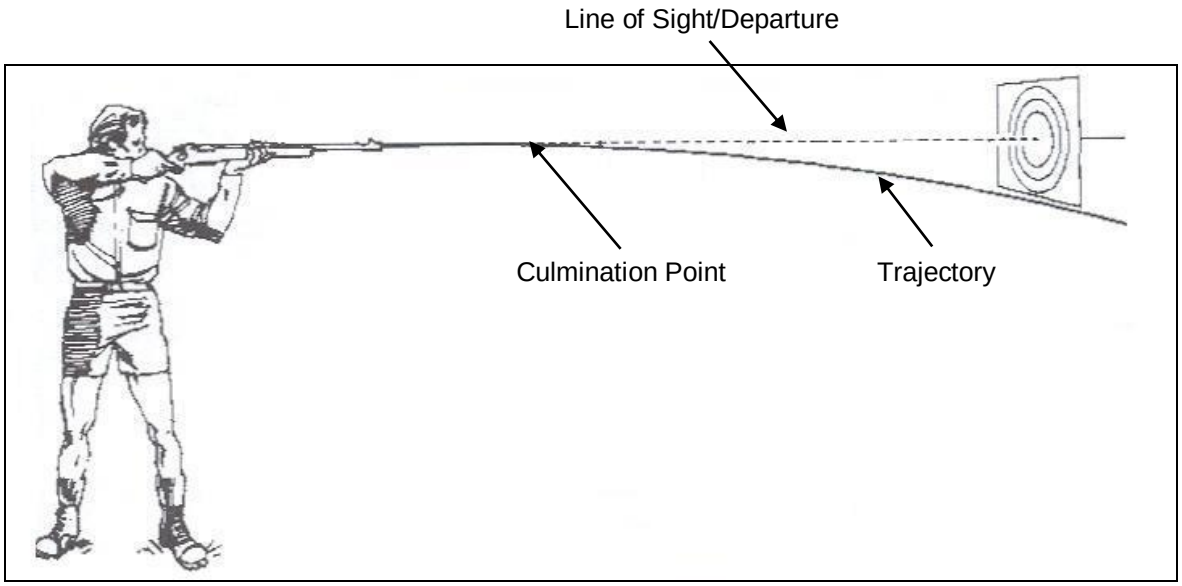


Fig 87 - Theory of Small Arms Fire

The Cone of Fire (CofF)

6.11 The Cone of Fire (CofF) is the term for the three dimensional pattern formed in the air by either a burst from an automatic weapon or series of single shots fired at the same point of aim (the 'group' in flight). It is visualised as a vertical circle of Extreme Spread diameter.

6.12 The CofF for the .22 rifle at 25mtrs is ± 40 mills in both Elevation and Azimuth.

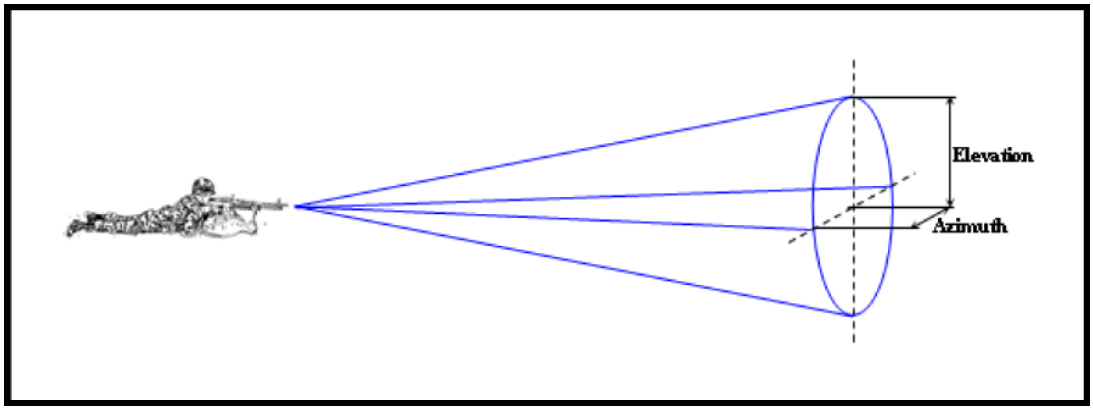


Fig 88 - The Cone of Fire

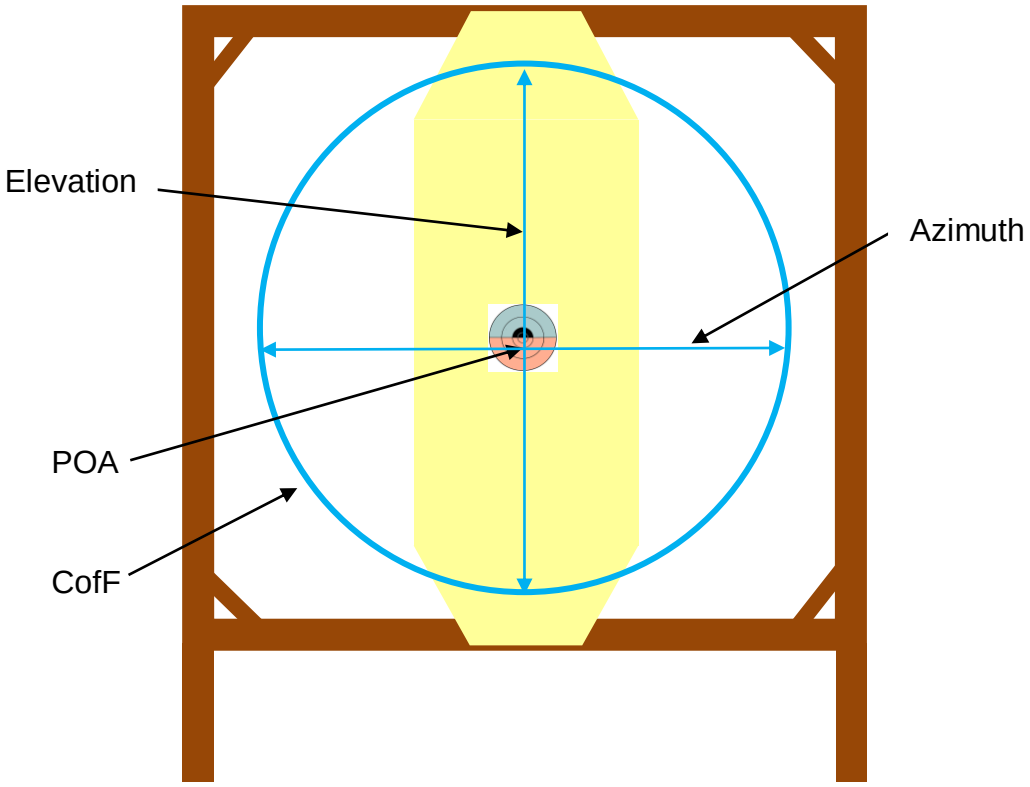


Fig 89 – The Cone of Fire applied to the target (not to scale).

SECTION 5 – The Theory of the Group

Why the Group is Formed

6.13 When several shots are fired at the same aiming mark they will not all strike in the same place, but will form a pattern on the target, which is called a group.

6.14 This variation between individual shots is caused by the following:

a. **The Rifle and Ammunition.** Wet ammunition, variances in manufacture of the rifle;

b. **Climatic Conditions.** Wind, heat, light and rain will affect the round, aim and rifle in some way; and

c. **Application of the Marksmanship Principles.** Where the principles are not adhered to, the group will be larger.

What is a Group

6.15 A group is a pattern formed by a series of shots, not less than three, fired consecutively at the same point of aim, applying the marksmanship principles.

Grouping Capacity

6.16 Grouping Capacity (GC) is the term applied to a firer's average grouping performance established from a number of groups and over time should be noted for all firing positions. Firers must be encouraged to record all grouping performances and GC (and therefore ESA - see below) will be known for variations in the position, climatic conditions and the firers temperament. **This is the basis of the calculations that will prepare the firer to effectively apply fire.** More is better than less but each calculation should be confined to a particular set of conditions and these carefully noted. The example below is calculated on 4 x groups, perhaps a recruit scenario. The GC can be expected to improve over time especially those firers initially recording groups of larger size or widely varying ES.

Example:

ES Group 1 = 26mm

ES Group 2 = 15mm

ES Group 3 = 21mm

ES Group 4 = 18mm

Sub Total = **80mm**

80 Sub total

÷ 4 No. of Groups

= **20mm** Firers GC

6.17 The ability to apply the marksmanship principles will determine the grouping capacity. A cadet who consistently applies the principles will be an above average shooter, producing small groups. Grouping is therefore the foundation of all shooting.

Mean Point of Impact (MPI)

6.18 The centre of the group is referred to as the Mean Point of Impact (MPI).

6.19 To calculate the MPI, follow the steps below:

a. draw an imaginary box around the extremity of the effective group (4 or 5 rounds);

b. draw an imaginary line from corner to corner of the box; and

c. where the lines intersect is the centre of the group or MPI.

6.20 A shot per group should be disregarded if its inclusion would do any of the following:

a. adversely alter the MPI of the effective shots of the group (compare with the MPI of other groups fired); or

b. cause the MPI to fall away from the centre of the effective group.

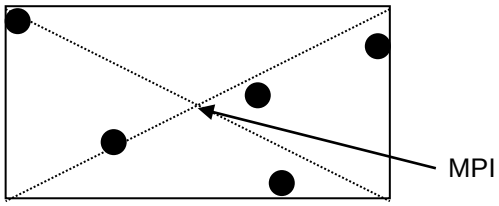


Fig 90 - Calculating the Mean Point of Impact (MPI)

The Extreme Spread (ES)

6.21 Calculating the extreme spread (ES), measure the distance to the extreme shots of the group as follows:

a. determine whether the group contains 4 or 5 effective rounds;

b. identify which two of the effective shots are the furthest apart; and

c. the ES of the group is the distance measured between these two shots (outside to outside).

6.22 For the firer to qualify on a grouping practice he/she must group within the qualifying standard of 25mm.

6.23 Once achieved the firers' Grouping Capacity (GC) can be calculated by dividing the total ES of all the groups fired.

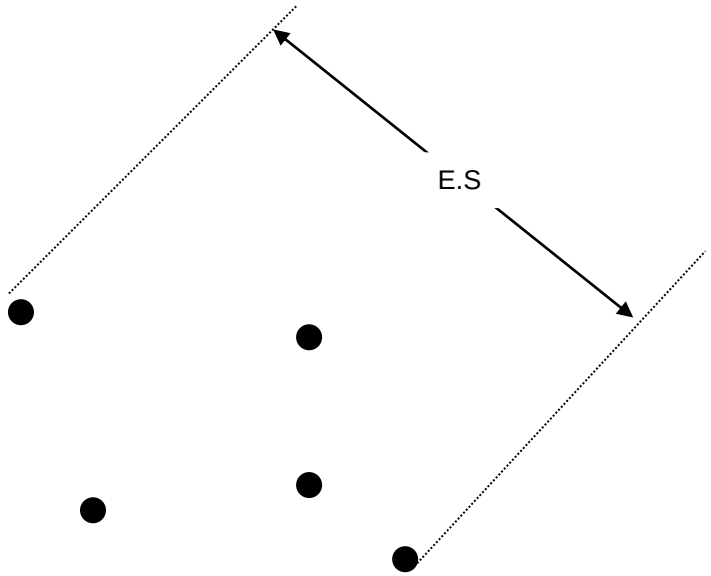


Fig 91 - Calculating the Extreme Spread (ES)

SECTION 6 – The Marksmanship Principles

The Marksmanship Principles

6.24 For accurate shooting it is important that the firer has a comfortable and effective method of holding the rifle and that the rifle is aligned correctly with the target. The firer must understand and apply the Four Marksmanship Principles, which are as follows:

a. the firers position and hold must be firm enough to support the rifle;

b. the rifle is naturally aligned towards the target without any undue effort or strain on the part of the firer;

c. the sights of the rifle must be correctly aligned; and

d. the shot must be released and followed through with minimum disturbance to the firer's position or the rifles alignment onto the target.

Application of the Marksmanship Principles

6.25 The application of these principles demands concentration, and this coupled with a determination to shoot well will ensure success.

Principle One – Position and Hold

6.26 Variations in basic positions are caused by differences in the build and height of individual cadets. Although positions may vary they have one common factor, that the position must afford the maximum degree of support for the rifle. To meet the requirement of maximum support it is important that the following features are incorporated:

a. **Stability.** Stability is achieved by firm contact with the ground. Firm support of the rifle is obtained through points, that is, left hand, right hand and right shoulder. Practice is necessary to overcome any initial discomfort:

(1) **Supporting Hand.** Rest the fore-end on the support and adjust the position of the arm and hand so that a good grip and a comfortable position is achieved. The elbow should be on the ground behind the support, with the hand gripping the fore-end firmly. No attempt should be made to grip too tightly or pull back with the hand, as this will cause unnecessary muscle tension.

(2) **The Controlling Hand or Master Hand.** The controlling hand must hold the small of the butt firmly. The web between the forefinger and thumb should be as near to the top as possible. The grip with the hand must be firm, pulling the rifle firmly back towards the shoulder, but without strain. The position of the elbow is determined after taking a correct hand grip; it should be one that does not cause the wrist to twist.

b. **The Body.** The following is how the body should be positioned. It is to be stressed that whatever is comfortable for the firer may differ from what is suggested below;

(1) The body should form an angle of approximately 200 mils to the line of sight.

(2) The muscles should be relaxed as possible to avoid the muscle tremors that accompany tension.

(3) The leg should lie parallel to the direction of the body with the toe turned inwards and the leg muscles relaxed.

(4) The other leg should be drawn up until the thigh is approximately 1600 mils to the line of the body and the lower part of the leg lies parallel to the line of sight. The foot should point outwards with the heel on the ground. By drawing up this leg the weight of the body is rolled on the left or right and this allows easier breathing and less restriction on the heart, which in turn reduces pulse beat. The leg position that best suits the firer's build will have to be established.

c. **The Head.** The fleshy part of the cheek (not the cheek bone) should rest against the butt in a position that allows the eye to look straight through the sight without strain. The head should be upright and should be positioned to achieve a clear aim picture without distortion;

d. **The Butt.** The butt must be located in the hollow formed between the collarbone and the shoulder muscle;

e. **Eye Relief.** The distance between the eye and the rear sight will vary between firers. It is important that the firer achieves the correct sight picture (fig 52); and

f. **Consistency.** Failure to achieve a constant shooting position will have an adverse effect on shooting. The use of sandbags as support will assist the cadet in achieving consistency in the early stages, but it must be remembered that the use of such support can encourage over-relaxation with subsequent problems when the support is removed as for the National Competition Shoots and the Ffennell Competition. The rifle should not rest on the support.

Fig 92 – The ideal prone position

Principle Two – Natural Alignment

6.27 The second marksmanship principle requires that the rifle align naturally towards the target. To achieve this it is necessary to remember that the rifle is an integral part of the firing position and hold. It is the alignment of the position as a whole that controls the alignment of the rifle.

6.28 After the firing position is adopted any physical effort needed to point the rifle at the target will result in the bullet being directed away from the target. This is caused by the influencing forces being unequal. If the rifle is strained in any one direction, it will move against that strain at the moment of firing. Because this movement occurs before the bullet leaves the barrel, displacement from the point of aim occurs.

6.29 There must never be an attempt by the firer to eliminate rifle movement entirely. As the rifle is fired, it will always move and the firer must try to eliminate any inconsistencies in that movement. This is achieved by avoiding muscular strain and adopting a position that points naturally towards the target. Experience will enable a firer to get into a correctly aligned position each time.

6.30 To check natural alignment to the target, the firer may observe the sight movement. When breathing in and out, the sight in the aim picture should move vertically through a line from 6 o'clock to 12 o'clock on the target or aiming mark.

Principle Three – Aiming

6.31 **Correct Sight Picture.** As with all shooting the correct aim picture is required. When looking through the aperture of the rear sight, the blade of the foresight should be central and superimposed on the aiming mark. Focus is on the tip of the foresight when the shot is released.

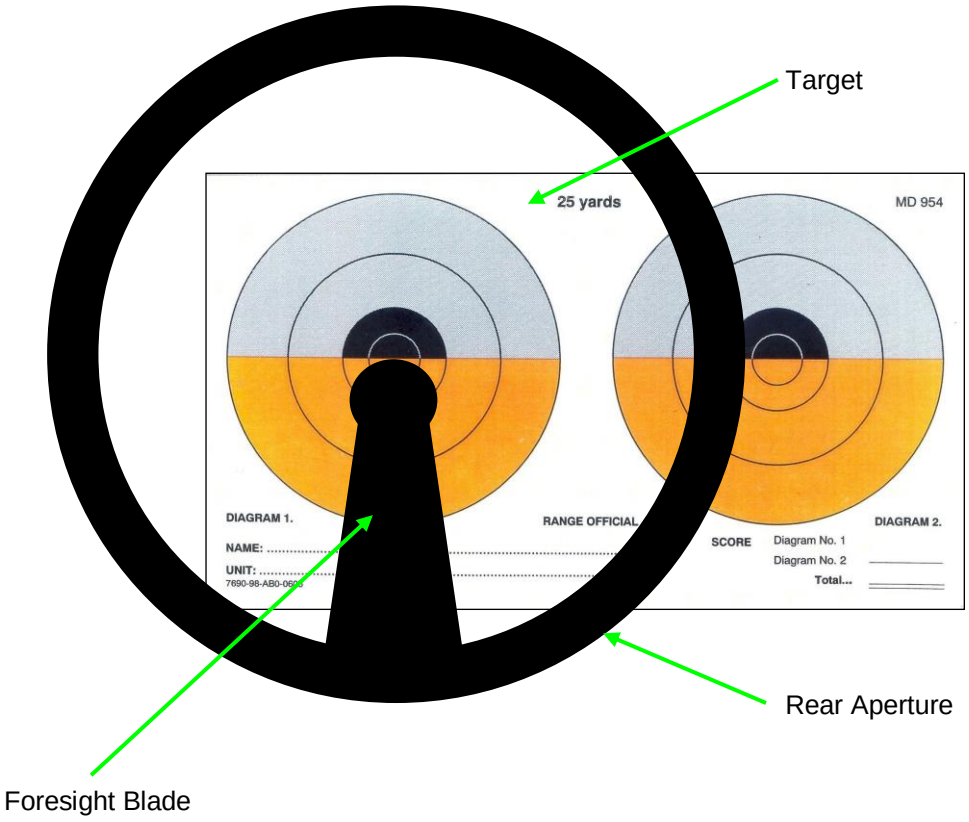


Fig 93 - Correct sight picture (not to scale)

6.32 **Where to aim.** You should aim at the centre of the target (as in Fig 93 above).

6.33 **How to aim.** The following is the procedure used to carry out natural alignment:

a. with both eyes open look over the sights to the target;

b. roughly align the sight onto the target;

c. rest the cheek on the butt; and

d. locate the target through the sight and close the eye that is not in use.

Testing and Adjusting the Position

6.34 It is essential that the rifle point naturally at the target without any strain on the firer. To achieve this, the firer is to test and if necessary adjust the position as follows:

a. aim at the target then relax the grip with both hands. The sight should remain on or very near the point of aim;

b. if the sight moves completely off the target an adjustment to the firing position is required.

To make an Adjustment for Line (Left or Right)

6.35 To make the adjustment carry out the following actions:

a. keep the barrel grip firmly supported; and

b. move the body to the left or right for lateral errors in the aim picture, move right to bring the barrel left and move left to bring the barrel right.

To make an Adjustment for Elevation (Up or Down)

6.36 To make the adjustment carry out the following actions:

a. keep a firm grip with the supporting hand and keep the elbow in place;

b. keep the butt firmly against the shoulder; and

c. move the body forward to bring the barrel down and move the body rearward to bring the barrel up. Ensure the supporting elbow does **not** move forward or backwards.

To Confirm Correct Adjustment

6.37 To confirm that the correction adjustments have been made, carry out the following:

a. lower the butt out of the shoulder;

b. close both eyes;

c. place the butt back into the shoulder in a comfortable firing position; and

d. open your master eye and check that the sight is on or close to the point of aim.

6.38 If you are not lined up repeat the above process. With practice it will become natural to adopt a position that will require little or no adjustment. However the test above should be carried out every time you get down behind the rifle prior to shooting.

Principle Four – Shot Release and Follow Through

6.39 There are three distinct aspects of concentration and co-ordination that must be practiced to master the fourth principle. They are breath control, trigger operation and follow through. These aspects are best considered separately, but should be remembered that the skills must be integrated and cannot be conducted in isolation by the firer. The skills are as follows:

a. **Breath Control.** Breathing is a natural body function that requires no conscious thought on the part of the individual. The natural process of breathing causes body movement that must be controlled:

(1) There are three aspects of the breathing cycle that are of importance to the firer:

(a) During the normal cycle the lungs are neither completely filled nor empty;

(b) After breathing out, there is a natural pause; and

(c) The whole cycle takes approximately five seconds.

(2) It is clear that there must be a pause in the breathing cycle so that the shot can be released without movement. As a natural pause occurs after breathing out, it is logical and relatively easy to extend that pause to six or seven seconds to enable the shot to be released.

(3) Before restraining the breathing, the firer should breathe in and out deeply at least once, possibly twice. The purpose of this is to oxygenate the blood to assist concentration during the breathing pause. The pause must not be extended longer than seven seconds since the effort of oxygenating the body will quickly wear off and a natural impulse to resume breathing will affect the firer's ability to concentrate. In this instance the firer should resume normal breathing again and repeat the cycle of restraint.

b. **Trigger Operation.** If the rifle or the aim is disturbed during the stage when the trigger is squeezed, the bullet will not hit the target. Providing that the position is correct with the rifle held firmly and pointing naturally at the target, all that is required is the control of breathing and a smooth operation of the trigger. This will allow the bullet to leave the muzzle without movement of the rifle.

(1) During the breathing pause, which should not be longer than seven seconds, the firer should perfect the aim and **squeeze** the trigger without disturbing the aim. The trigger finger should exert slight pressure on the trigger during the breathing pause. It is important that the action of the trigger finger is carried out without moving or reducing the grip with the master hand.

c. **Follow Through.** Follow through is the term used to describe the action the firer uses when manipulating the trigger as follows:

(1) As soon as the round has been fired, movement of the trigger must cease. The firer must remain on aim, looking through the sight and maintain the position and hold for about one second after the round has been fired. This follow through of the shot will eliminate movement of the rifle, caused by the firer raising the head or relaxing the hold.

(2) As the shot is fired the slight recoil action will cause the muzzle of the rifle to move. This movement should be the same each time a shot is fired. After each shot, the firer must observe what direction the sight picture moves in relation to the point of aim. The movement should be consistent. If a different movement is seen, the firer is to report the fact to the coach. It would be

normally found that the shot related to the change in movement of the sight picture would be misplaced from the main group of shots on the target.

SECTION 7 – Group Pattern Interpretation

6.40 To be able to identify likely faults in the firers' shooting, the coach is required to interpret different group patterns. Usually a firer will have more than one fault. This should be confirmed by observation of the firer and by inspection of the group before any faults are brought to the attention of the firer.

6.41 By studying a firers' group pattern, the shooting coach would be able to determine the nature of a problem and what corrective action, if any, should be required.

6.42 It is important to note, that group pattern interpretation is an aid to identifying faults and not the sole basis on which the fault is diagnosed.

6.43 Below are some of the common group patterns that the shooting coach may encounter with the cause of the pattern and the remedy required to rectify the problem.

6.44 Remember, before a possible problem is brought to the attention of the firer, you should confirm the fault by observing the firers' shooting technique.

6.45 As a coach you should not make an interpretation about the position of a group in relation to the aiming mark, unless the rifle is already zeroed.

6.46 In some cases serious firer faults may mean that accurate zeroing of the rifle is not possible. In these cases other coaching techniques or remedial training will be required to ensure the firer can group before moving on.

Note: The Point Of Aim for **all** examples below is the centre of the **left** aiming mark.

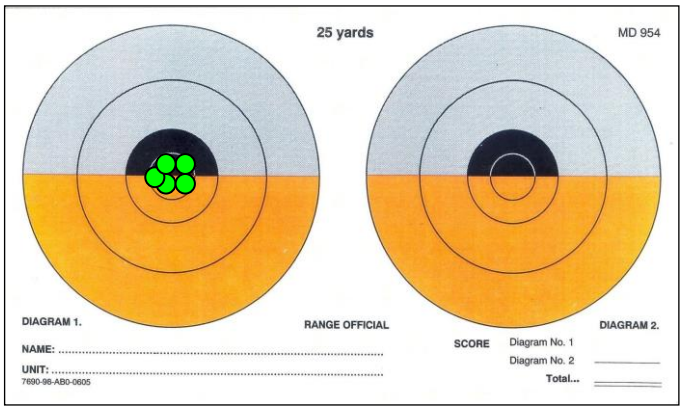


Fig 94 - Acceptable group

6.47 **Acceptable Group.** The group can be **anywhere** on the target or backing sheet and falls within the acceptable grouping requirements of 25mm or less.

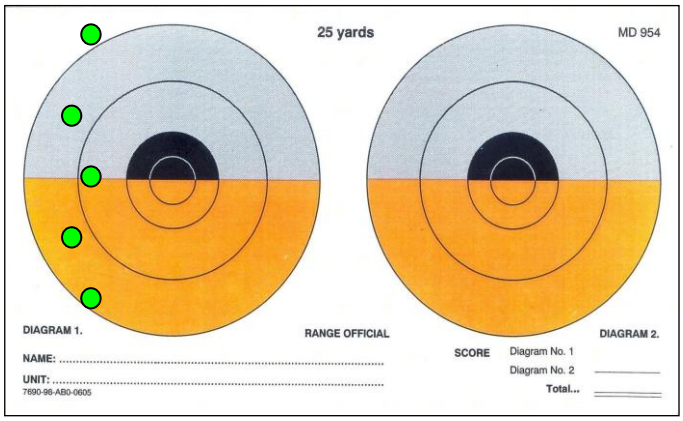


Fig 95 - Vertical group

6.48 **Vertical Group.** A Vertical Group is when the shots form a pattern from the top to bottom on the target.

a. common causes are as follows:

(1) Poor breath control.

(2) Poor use of support.

(3) Butt slipping in the shoulder.

b. the remedy for this is to explain to the firer what the fault is.

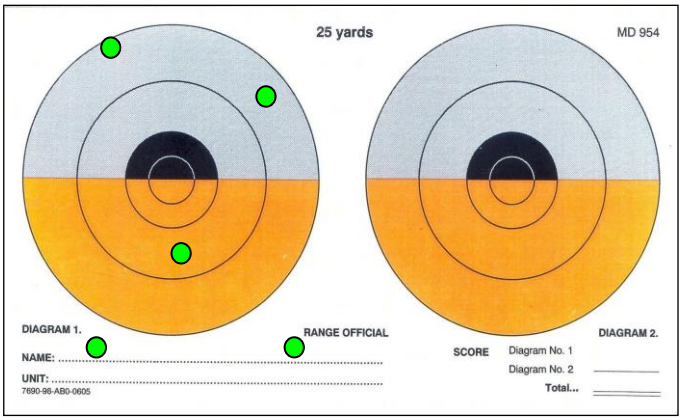


Fig 96 - Wide group

6.49 **Wide Group.** A wide group is when the shots form a haphazard pattern all over the target.

a. common causes are as follows:

(1) Dwelling in the aim.

(2) Foresight not central in the aperture for all shots.

(3) Shutting the eyes on firing.

(4) Poor trigger operation.

(5) Lack of confidence.

b. the remedy for this is to explain to coach firer though fault to build confidence.

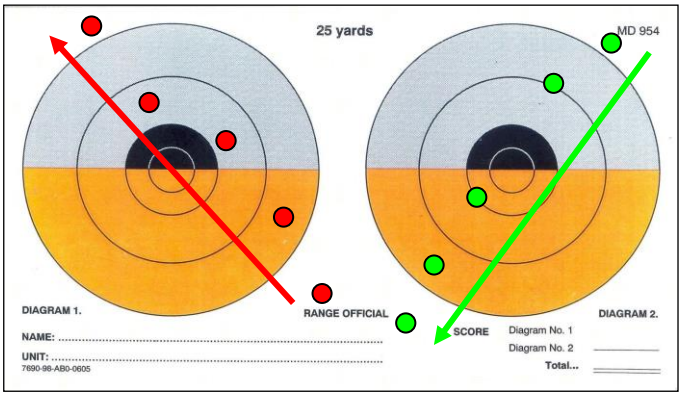


Fig 97 - Diagonal group (POA is both the left & right aiming mark)

6.50 **Diagonal Group.** A diagonal group is when the shots form a diagonal pattern on the target:

a. stringing to Left diagonally from the bottom:

(1) Common causes are as follows:

(a) Bracing against recoil.

(b) Butt slipping in the shoulder.

(c) Increasing cant.

(d) Raising head progressively.

(e) Easing grip of master hand.

b. stringing diagonally from top to bottom:

(1) The common causes are as follows:

(a) Flinching.

(b) Jerking the trigger.

(c) Off hand variation.

(d) Increasing cant.

c. the remedy for this is to explain to coach firer though fault to build confidence.

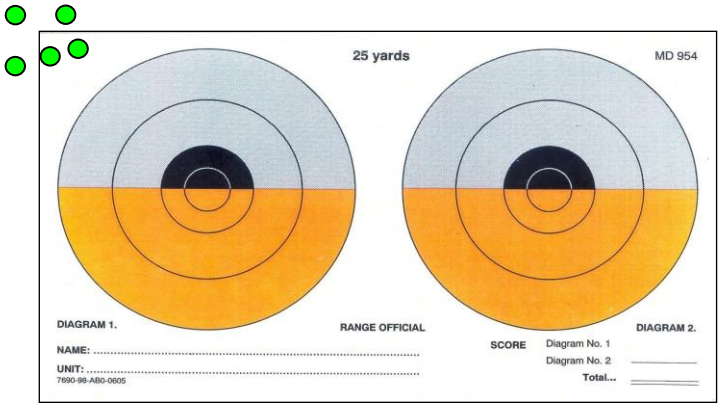


Fig 98 - High Left group

6.51 **High Left Group.** A high left group is when the shots fall top left of the target.

a. common causes are as follows:

(1) Bracing.

(2) No follow through.

(3) Poor trigger operation.

(4) Butt slipping in the shoulder.

b. the remedy for this is to explain and coach the firer though the fault.

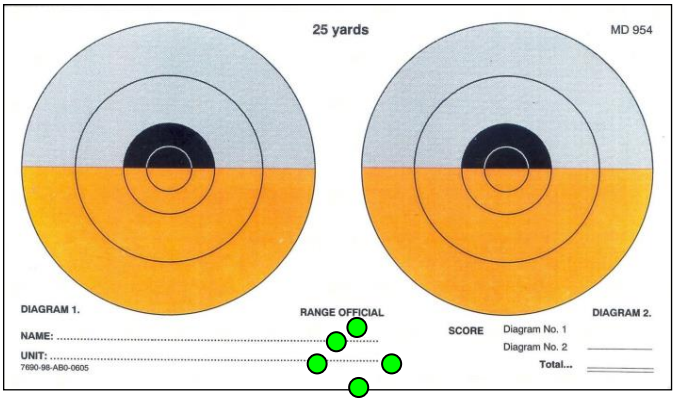


Fig 99 - Low Right group

6.52 **Low Right Group.** A low right group is when the shots fall bottom right of the target.

a. common causes are as follows:

(1) Flinching.

(2) Jerking the trigger.

(3) Left hand influence.

b. the remedy for this is to explain, coach the firer though fault and trigger operation.

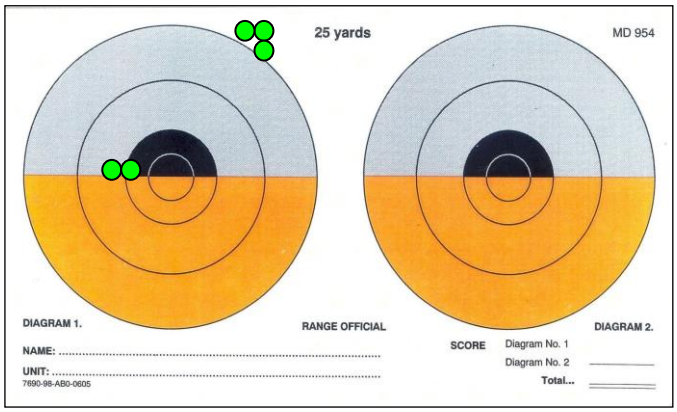


Fig 100 - Split group

6.53 **Split Group.** A split group is when 2 or 3 shots fall on the target at opposite sides.

a. common causes are as follows:

(1) Change in body position.

(2) Change in focus.

(3) Different point of aim.

b. the remedy for this is to explain to the firer that their right and left hand and elbows remain in the same position.

6.54 The following diagramme is an **aid** to assist you in determining the Directional Error for shots on the target.

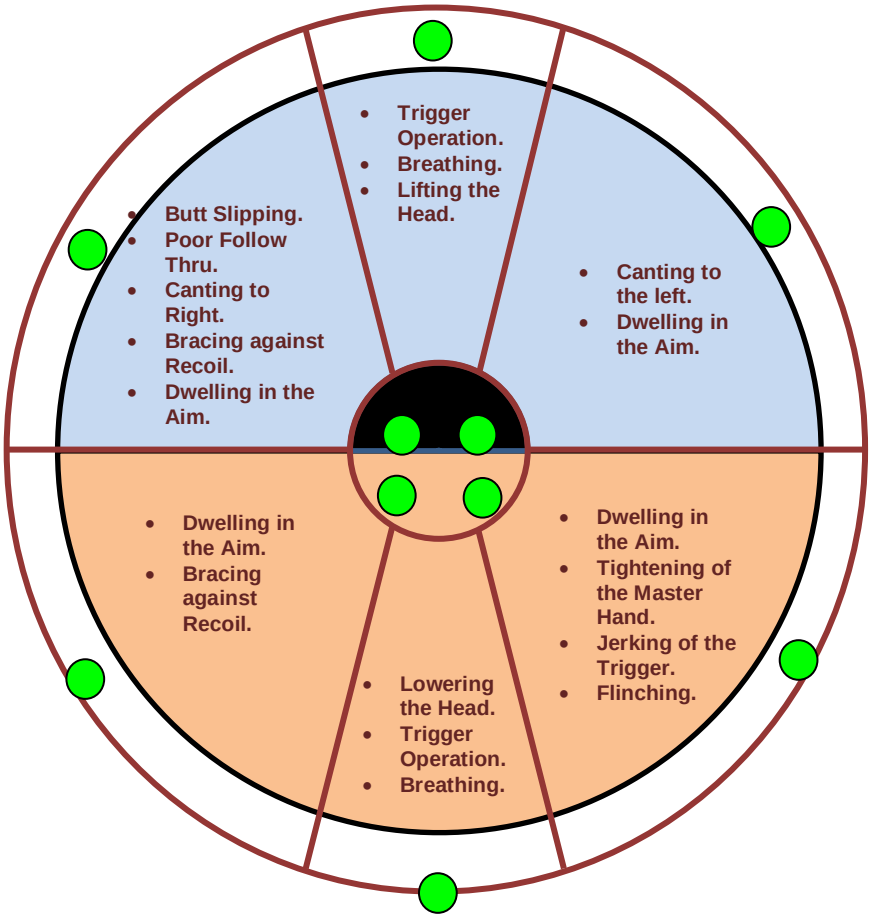


Fig 101 - Guide to directional error in

*(Group Pattern directional error guide for a **Right** handed firer)*

SECTION 8 – Grouping and Zeroing the Marlin Model-XT

Introduction

6.55 Incorrect zeroing of a rifle is one of the most common causes of poor shooting results. Without a correctly zeroed rifle, even a proven marksman is at a disadvantage.

Grouping Practice

6.56 Before any rifle can be accurately zeroed to an individual firer, that firer must be capable of grouping consistently to the required standard for the rifle. To achieve this, the firer must have mastered the four marksmanship principles. Premature attempts at zeroing during the grouping practices will usually result in confusion for both the firer and the coach. When this situation arises, it can be resolved by returning the firer to the grouping practice and successfully completing that practice before attempting the zeroing serials.

6.57 For all grouping and zeroing practices a support should be used, a sandbag of sand is the best option as it can be moulded to suit the individual firer.

6.58 The ability to place rounds fired with apparently the same aiming mark, into a group with a minimum of firer introduced inconsistency is the essence of good shooting. The ability to group shot locations consistently is the critical outcome of the application of the marksmanship principles.

6.59 The grouping practice and the developmental process stemming from it will be detrimentally affected by the influence of bad weather and will often need to be repeated. In the NZCF the range recognised for grouping is 25m.

The Purpose of Zeroing

6.60 The purpose of zeroing is to adjust the sights of the rifle to superimpose the firers MPI onto the Correct Zero Position (CZP). With a correctly zeroed rifle, a firers' group should form centrally on the target, providing the correct aim picture is applied. All rifles should be zeroed at the following times:

a. on initial and subsequent use by the cadet for competition shooting;

b. after a rifle has been repaired; and

c. whenever the rifles inaccuracy is in doubt.

Individual Zeroing

6.61 All rifles are not zeroed to any individual. Zero is a personal thing and it is unusual for any two individuals to have exactly the same zero with the same rifle. The reasons for this are:

a. variations in aiming;

b. the effect of jump. The extent of jump is influenced by the build of the firer the firing position and the tightness of the hold;

c. the firers' ability to apply the marksmanship principles; and

d. variations in eyesight.

Firing Position for Zeroing

6.62 The rifle should be zeroed in the prone position with the front forearm well supported on a sandbag. Instructors should ensure that the cadet's position is stable and that it complies with the rules of marksmanship.

Fig 104 - The sandbag securely positioned.

Fig 105 - Use of the sandbag in the prone supported position – view one.

Fig 106 - Use of the sandbag in the prone supported position – view two.

6.63 After zeroing, the firer is to be given the opportunity of grouping in the prone unsupported position to assess whether the MPI is affected by the change of position. The firer should record and monitor any changes to the MPI. Factors that may affect the MPI are:

a. resting the rifle against or on the support;

b. not using a support; or

c. using a sling if it severely alters body alignment.

Correct Zero Position

6.64 The Marlin Model-XT is zeroed for 25 metres. The Correct Zero Position (CZP) at 25 metres is the POA.

Zeroing Procedure for the Marlin XT

6.65 This procedure is adaptable to the characteristics of most small arms rifles:

a. **Step One.** The rifle should have been examined for serviceability before the grouping. To attempt to group with an unserviceable rifle is a waste of time and ammunition and potentially damaging to the firers' confidence;

b. **Step Two.** The firer confirms that he/she can group. This is normally done by firing two five round groups at different aiming marks. The extreme spread (ES) of the groups is to be within the required standard of 25mm;

c. **Step Three.** On achieving the grouping standard the firer then fires one five round zeroing group at an aiming mark in the prone supported position from 25 metres (27 yards);

d. **Step Four.** Determine the MPI of the group; and

e. **Step Five.** Measure the horizontal and vertical distance between the MPI and the CZP (see fig 107 below).

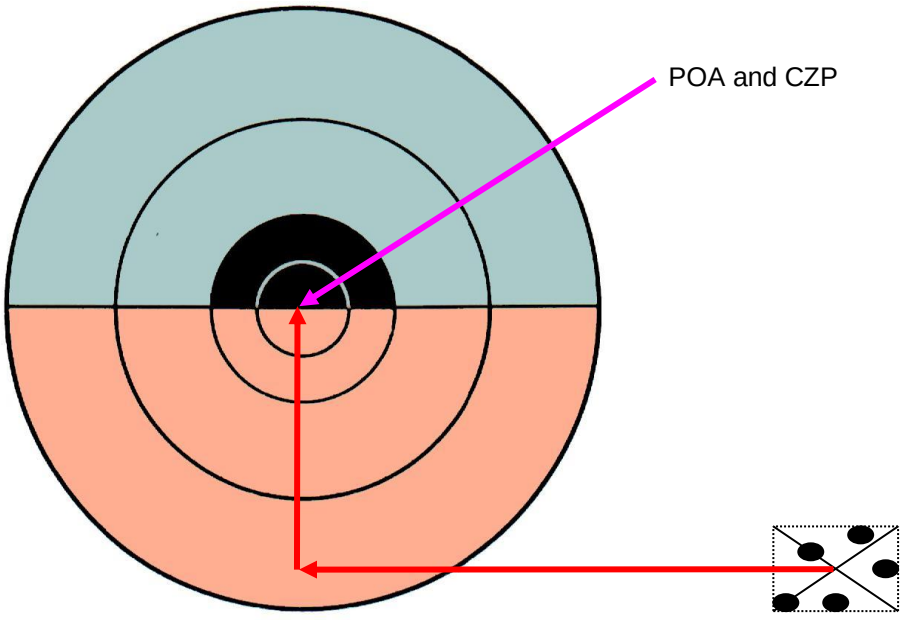


Fig 107 - Calculating the zero

Permissible Variation (PV)

6.66 Permissible Variation is the degree of error from MPI to CZP considered acceptable, the point at which the calculations and adjustment accurately reflect the firer's ability and further adjustment not justified. PV is ¼ of a firers grouping capacity. If the distance from the CZP to the MPI is within the PV or 6mm (minimum adjustment on sight), no further effort need be made to refine the zero at this point. Two examples follow:

Sight Adjustments

6.67 The WGRS-54 Peep Sight on the Marlin XT is adjustable for elevation and deflection. Prior to making any adjustments to the rear sight, the locking screws **are to be** loosened off a quarter of a turn only. The locations of the screws are shown in Figs 108 & 109 below:

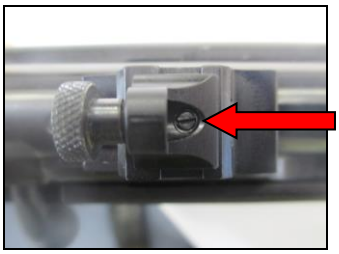


Fig 108 - Deflection locking screw

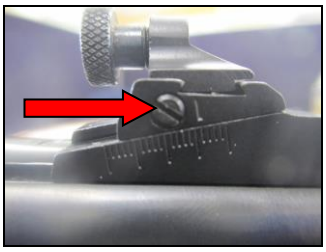


Fig 109 - Elevation locking screw

6.68 To **Raise** the MPI, unlock the elevation locking screw a ¼ of a turn then push the sight forward. To **Lower** the MPI, push the sight to the rear. Once adjusted, retighten the elevation locking screw a ¼ turn, **DO NOT** over tighten.

6.69 To move the MPI to the **left**, unlock the deflection locking screw a ¼ of a turn then slide the sight to the right. To move the MPI to the **right**, slide the sight to the left. Once adjusted, retighten the deflection locking screw a ¼ turn, **DO NOT** over tighten.

SECTION 9 – Coaching the Elementary Application of Fire

6.70 The elementary application of fire teaches the first stage of the adjustment process by requiring the firer to make a single Primary Adjustment to the point of aim (POA), for the first time effectively placing the group over the centre of the target. During the teaching process it is fired only at superimposed targets to reinforce the role of sighters and the mechanics involved. The use of the superimposed target is an intermediate step, preparing firers for the occasions when an aim off must be applied to effectively engage targets.

6.71 Throughout elementary application, firers are required to conform rigidly to the sequence of:

a. firing **all** sighters at the **centre** of the target;

b. calculate the MPI and measure the error between the MPI and the POA;

c. calculating the correction required to the sight picture to adjust the fall of shot to be centred on the target, i.e. aim off equal and opposite amount. (Initially this may be with the aid of a shooting coach and would therefore be – Coached, Elementary Application of Fire.); and

d. firing all allocated scoring rounds at a corrected POA. This is known as the Primary Adjustment and is the only adjustment made to the POA during the Elementary Application of Fire.

6.72 The role of the coach is to assist the firer in all aspects of the practice including the calculation of aim off required from the **MPI** of the effective sighting rounds fired.

6.73 It is **not** a timed practice and RCOs and Shooting Coaches **must** take the time necessary to ensure that firers understand the mechanics of what they are required to do.

Stores Required

6.74 Coaches require the following stores:

a. shooting coaches aid memoire;

b. notebook and pen/pencil;

c. ruler; and

d. ear protection.

Targets

6.75 The targets to be used for Elementary Application of Fire are the Figure 5A facing superimposed onto an A3 size paper or bigger.

Before Firing Check

6.76 Coach to check the following:

a. rifle is prepared for firing;

b. establish firers level of experience (shooting record book);

c. confirm that firer understands the practice;

d. confirm that firer has identified the correct target;

e. firer aligned to correct target;

f. confirm that the firer has the correct point of aim;

g. barrel not resting on the support/rest;

h. firers position and support are acceptable; and

i. firer has ear protection.

During Firing Check

6.77 Proceed as follows:

a. position yourself to best observe the firing of each shot;

b. from the sighting rounds, establish the **MPI** and discuss the point of aim for the scoring rounds to follow: and

c. observe the firer to correct faults as necessary.

At the Target

6.78 Include these actions:

a. inform firer of score obtained as soon as possible;

b. discuss accuracy of primary adjustment;

c. discuss any further faults observed and advise courses of action; and

d. give encouragement as required, it is a very useful tool.

*Fig 110 - Sight picture (POA) for **all** rounds in sighter group*

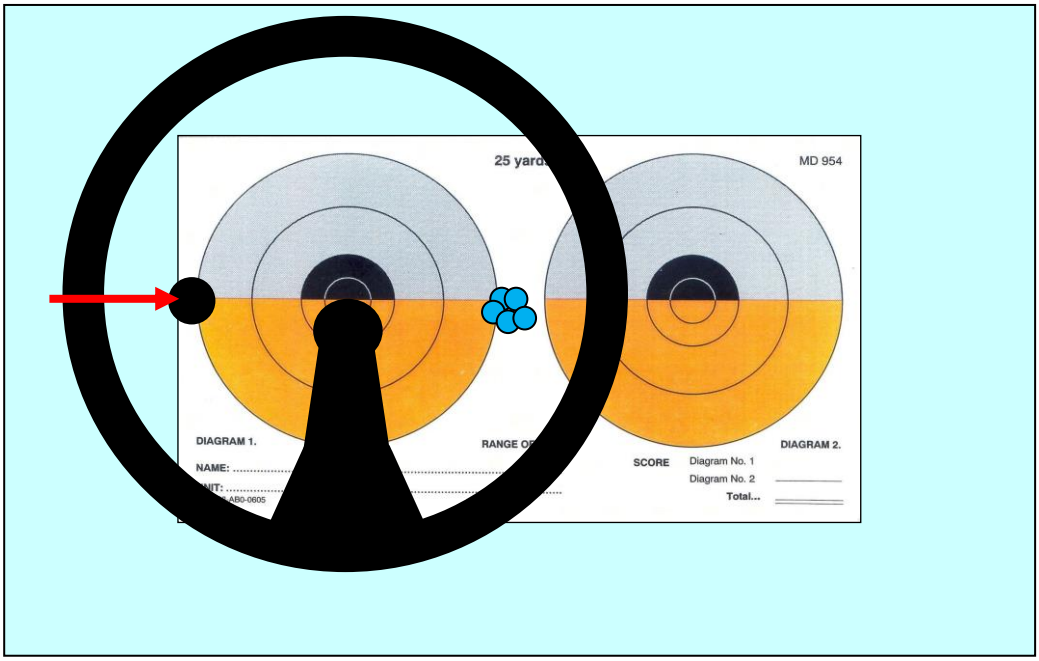


Fig 111 - Location of sighters (in blue) and the calculated new POA for scoring rounds indicated by red arrow & black dot

*Fig 112 - Sight picture (with new POA applied) for **all** scoring rounds for the serial and scoring rounds indicated in blue*

SECTION 10 – Use of the Single Point Sling

Introduction

6.79 The sling helps to support most of the weight of the rifle, ensuring minimal muscular effort on the part of the firer. The sling should be positioned on the upper left or right arm above the biceps near the shoulder. This is the area on the arm where the smallest amount of pulse can be felt. The sling can be held in place by a large safety pin to the clothing if desired. The sling should never be twisted. In summary, the sling provides maximum support of the rifle with the least amount of physical effort on the part of the individual. Bear in mind the following Steps are used when there is no rifle support and used mainly for the Competition Shoots.

Adopting the Prone Position using the Sling

6.80 The following are the steps to use when adopting the prone position when using the rifle sling:

a. **Step One.** Form the arm loop in the sling, turn it one half turn to the left, place the loop high on the arm and tighten the arm loop ensuring that you do not tighten it too tight so that it cuts off the circulation. Lie down on the mat, take up the rifle and clip the sling onto the front sling swivel. Make sure that the sling length is as long a possible. This will ensure that the sling is 'long and loose' when the firer first gets into position. Extend the left arm and rotate it over the sling so the left hand grasps the fore-end and the sling passes over the back of the hand. Be sure to keep the sling long and loose at this stage, trying to adjust the sling length before getting into position is one of the worst mistakes that can be made.

b. **Step Two:** After lying down with the proper body angle, there are three keys to building the position correctly. The first position key is the left elbow. To determine where it should be placed, have the firer imagine a straight line extending from the left foot to the left hand. The correct location for the left elbow is directly under this line. As a coach you can stand over or behind the firer and easily see whether the elbow is under this 'side-line'. Placing the elbow directly under the left side-line will support the weight of the rifle and upper body.

c. **Step Three:** The second position key is the location of the butt in the shoulder because the placement of the butt determines the head position. The code phrase to remember is 'butt up – head up'. If the butt is up in the shoulder, the head will also be up so that the firer can look comfortably forward through the sights. If the butt is too low, the head must be lowered so that the eye must look up instead of forward and aiming is strained. Once the butt - head position relationship is established, the butt should not be shifted up or down in the shoulder to get the sights to point at the target. Do that by going to Step 4. Remember at this step the sling must remain loose.

d. **Step Four:** At this stage in building the position, the firer must be concerned only with raising or lowering the rifle and rifle sights to bring the sights to the level of the targets. Do not try to force the sights to align on a particular target. This vertical

adjustment must be made by shifting the left hand forward to lower the sights or rearward to raise the sights.

e. **Step Five:** Only after the basic prone body position that is determined by the body angle, left elbow location, butt - head relationship and left hand location on the fore-end is established, should the sling be tightened. After these position keys are established, then tighten the sling until it takes over the work of supporting the rifle.

f. **Step Six:** With the body in position and with the sling supporting the rifle the sights should be pointing at target level, but will most likely not be pointing at the correct target. The proper way to move the sights to the correct target is to shift or rotate the entire body and rifle position on the left elbow. The wrong way to do this is to try and force the sights to point at the target. Learning to shift the entire body position over the pivot point provided by the elbow is really the first step in learning how to adjust the Point Of Aim (POA). Make this shift by using the feet and legs to lift the body and move it to the left or right until your sights point naturally at the target.

6.81 Once the sling has been adjusted and fits properly, the firer only needs to pull the rifle back under their arm slightly and unhook the sling off the front sling swivel and stand up, the sling remains attached to the arm until required to shoot again. When the firer gets back down behind the rifle the firer only needs to hook the sling back onto the front sling swivel with very little or no adjustments necessary.

Adjustment of the Sling

6.82 If the sling is too loose it will no longer act as a method of support and the cadet will hold the rifle using their muscles. If the sling is too tight, blood flow will be restricted and cause a more pronounced pulse, which will have a negative effect on the cadets hold. Therefore, the sling must be comfortable on the arm, providing maximum support, while not clenching the arm.

Fig 113 - The single point sling

SECTION 11 – Use of the Laser Bore Sight (LBS)

Introduction

6.83 Sighting in a rifle should be a relatively quick and easy process, but that isn't always the case. You can spend lots of time and lots of ammunition trying to zero a rifle, and the process can be very frustrating. But there is a way to get your rifle on target and on your way to fine-tuning without incurring that frustration and wasted ammunition. It's called bore sighting.

6.84 Bore sighting is the process of aligning the bore (centre of the barrel) of a firearm with the sights on your firearm. It's a relatively simple process and one that all Cadet Unit Shooting Coaches and Range Conducting Officers should be familiar with. It also takes just a few minutes to bore sight a firearm properly.

Procedure

6.85 The below is the procedure to follow when Laser Bore Sighting your unit rifles. One of the important steps to follow is that the Laser Bore Sight needs to be 'laser bore sighted' first.

Steps	Procedure	Remarks/Notes
Step 1	Place bore sight chart **10m** from the rifle.	Place chart on wall
Step 2	Stabilise the rifle.	Use a vice, sandbags and a second person.
Step 3	Select the .22 mandrel.	Screw into Laser Bore Sight (LBS) unit and insert into muzzle. Ensure fully seated and rotates freely.
Step 4	Confirm **10m**.	Using string or tape measure to measure distance to chart.
Step 5	Switch laser bore sight on.	Watch for laser strike on chart.
Step 6	Align laser light.	Move until LBS light chart LBS Collimating Mark.
Step 7	Identify **Start Point** known as the 12 O'clock position.	Start point is with the battery compartment or other known mark being uppermost. **Note:** Always rotate counter clock wise (CCW) from the rifle holders' position; otherwise mandrel will unscrew the LBS if you rotate clock wise (CW).
Step 8	Identify the 6 O'clock position ($^1/_2$ turn).	When battery compartment or other known mark at lowest point. Also known as half a turn.
Step 9	Check zero of LBS.	From start point with laser dot on LBS zero point, rotate LBS CCW 180 degrees. • If laser dot remains static on chart, the LBS is zeroed, go to step 14. • If laser dot moves, LBS is not zeroed, follow steps 10 - 13.
Step	Prepare to zero LBS.	Move rifle or laser zero chart to a distance of **2m** from

Steps	Procedure	Remarks/Notes
10		LBS.
Step 11	Check LBS zero.	Re-align LBS onto aiming point at **2m**. Rotate LBS to start point. Mark laser strike dot on chart. Rotate CCW to 6 O'clock and mark 2nd laser strike dot on chart.
Step 12	Adjust Laser Bore Sight zero.	Using deflection and elevation adjusters on LBS, move dot to ½ way position between the 12 O'clock and 6 O'clock markings.
Step 13	Check Laser Bore Sight zero.	Repeat steps 11 – 12 until dot remains still, move bore sight chart back to **10m**, re-align laser dot onto LBS Collimating Mark.
Step 14	Prepare to zero rifle.	Prepare rifle for zeroing (as per normal zeroing).
Step 15	Zero the rifle.	Using deflection and elevation adjusters on sight to move sight onto **Rifle Zero Cross Mark** (yellow square) while maintaining LBS red dot on LBS Collimating Mark.
Step 16	Dismantle Laser Bore Sight.	Dismantle LBS system and pack away.

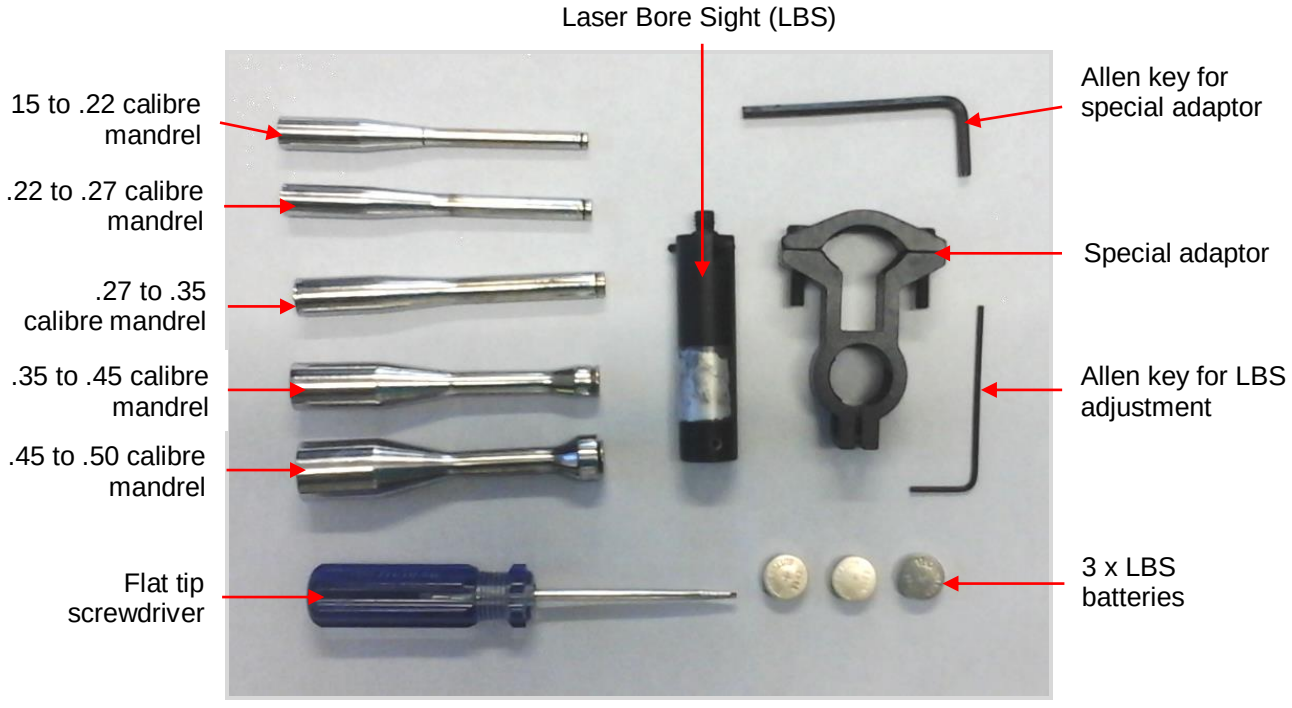


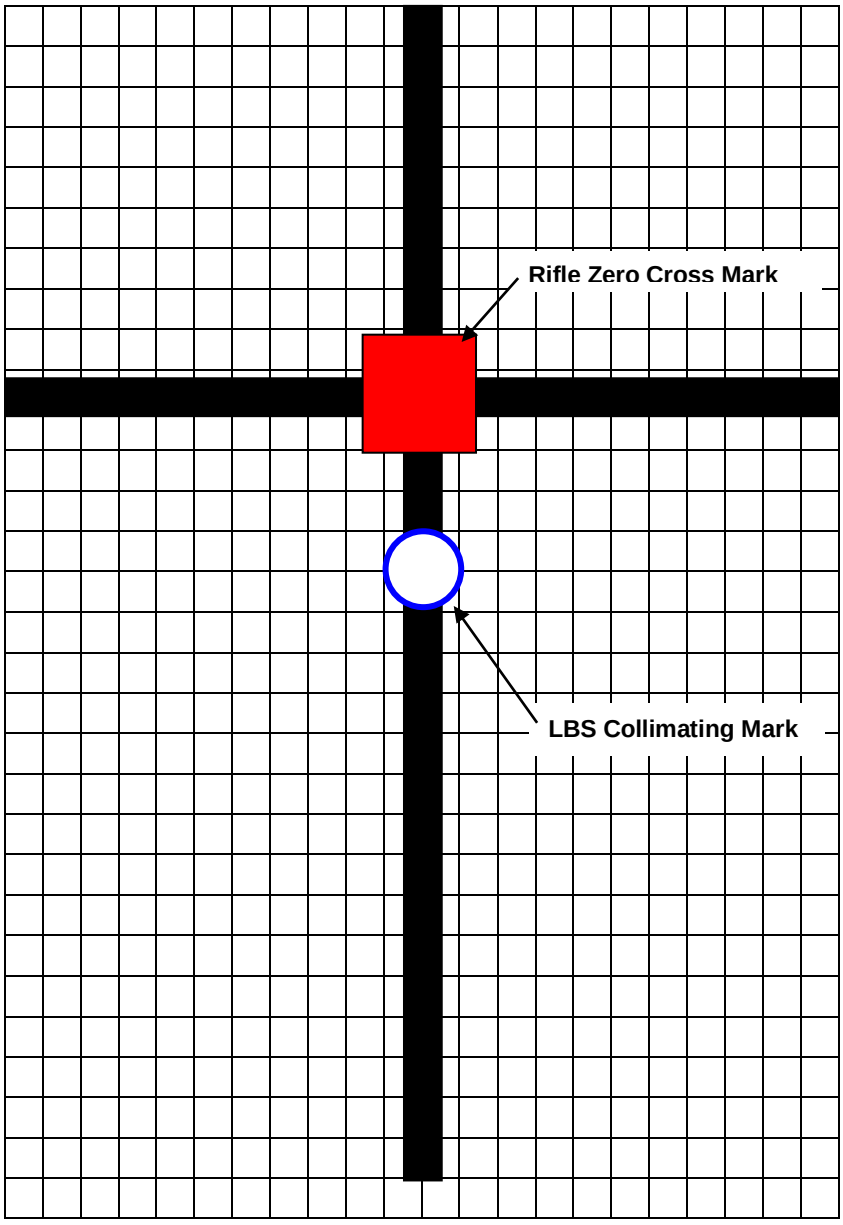
*Fig 114 - An **example** of a Laser Bore Sight (LBS) kit*

DRY ZERO CHART

Rifle: NZCF .22in Marlin Model-XT

Sight: Williams WGRS 54 Peep Sight

(22m zero, **10m** Setup Chart)



PART 7 – Range Standing Orders

SECTION 1 – Range Standing Orders

General

7.1 Using firearms is an activity in which risk is inherent. The aim of the Range Standing Orders is to promote safe range operations, and to mitigate against potentially hazardous and preventable incidents.

7.2 Cadet Units who own and operate indoor or outdoor ranges **are to** produce and promulgate a set of Range Standing Orders applicable to their range. Annex A to Part 7 contains an **example** set of generic Range Standing Orders template, that can be used by cadet units when compiling their own set of Range Standing Orders.

7.3 **Purpose.** Range Standing Orders are required, so as to ensure that:

a. all necessary precautions are taken to prevent accidents to range users;

b. danger to the public is prevented;

c. maximum use is made of available range space;

d. only **authorised** firearms and ammunition are used on the range;

e. only **authorised** shooting activities are conducted on the range;

f. all activities are conducted in accordance with specified publications and primary references; and

g. all personnel are briefed on the amenities provided.

7.4 **Production and Amendment.** Cadet Units who own and operate indoor or outdoor ranges **are to** produce and promulgate a set of Range Standing Orders and Range Safety Rules applicable to their range. Cadet units are also to ensure any amendments are inserted and promulgated to all range users.

7.5 **Distribution.** Copies of range standing orders are to be distributed and made available to all range users by the range operator; this includes a copy to the Area CFTSUs, HQ NZCF Training Cell and placed on the cadet unit file.

7.6 **Contradictions.** Where Range Standing Orders contradict the content of this manual then the range standing orders are to take precedence. Where a range conducting officer identifies a contradiction between range standing orders and this manual, that range conducting officer is to advise the range operator of the contradiction. The range operator is to be prepared to justify their range standing orders as and when required.

Content of Range Standing Orders

7.7 **Introduction.** The content specified in paragraph 7.8 to paragraph 7.13, of this section, is intended for range standing orders of purpose-built ranges.

7.8 **General Content.** The following general content is to be included in all range standing orders for purpose-built ranges:

a. **Name and Location.** Name and location of the range;

b. **Safety Certificate.** Copy of the current Range Safety Certificate. The range operator is to ensure that any restrictions listed on the Range Safety Certificate are incorporated in range standing orders;

c. **Associated Publications.** List of publications to be read in conjunction with range standing orders;

d. **Points of Contact.** Name of the organisation and appointment title of the point of contact for:

(1) range operator;

(2) range bookings;

(3) range administration; and

(4) the Maintenance and Environmental Management Plan.

e. **Map or Scaled Drawing.** A map or scaled drawing showing the following:

(1) the range structures and facilities;

(2) the range danger area (including natural and artificial features) that is appropriate for the authorised firearms, ammunition and firing activities;

(3) Positions of:

(a) range boundary and range in use flags and lights;

(b) danger boards and signs;

(c) movement control barriers; and

(d) sentries if applicable.

7.9 **Planning Content.** The following planning content is to be included in all range standing orders for purpose-built ranges:

a. **Bookings.** The range booking procedure;

b. **Authorised Firearms and Ammunition.** Authorised firearms and ammunition that may be used at the range, including instructions for the use of un-zeroed firearms and the procedure to authorise the use of unauthorised firearms and ammunition and their use is within the design limitations of the range;

c. **Authorised Live Firing Activities.** Authorised live firing activities that may be conducted at the range and the procedure to authorise the conduct of unauthorised live firing activities that are within the range design limitations;

d. **Authorised Firing Points, Firing Lines and Firing Areas.** Firing point, firing lines and firing areas from which firing is permitted, including instructions for firing postures that may be used, number of firers permitted and ensuring muzzle clearance. Using firearms is an activity in which risk is inherent. The aim of the Range Standing Orders is to promote safe range operations, and to mitigate against potentially hazardous and preventable incidents;

e. **Targets.** The types of target that may be used including:

(1) any relevant specifications, dimensions and positioning instructions (for example, target display height and location).

f. **Personal Protective Equipment.** Personal protective equipment requirements including hearing protection, ballistic eye protection and backsplash hazard mitigation, for all personnel;

g. **Communication.** Method of communication between firing line, sentries and other personnel; and

h. **Authorised Users.** Use of the facility by other New Zealand Cadet Force units or civilian clubs.

7.10 **Before Firing Content.** The following before firing content is to be included in all range standing orders for purpose-built ranges:

a. **Range Danger Area Clearance.** The procedure to ensure that before firing begins all practicable steps have been taken to ensure that the range danger area is clear of all unauthorised personnel and equipment;

b. **Pre-Firing Briefings.** The verbal pre-firing briefings to all staff, firers, sentries and other personnel involved in the conduct of the practice, on the intended practice and any safety limitations and their before, during and after firing duties and responsibilities;

c. **Flags, Lights, Signs, Boards, Barriers and Fences.** Operation of:

(1) range boundary and range in use flags and lights;

(2) danger boards and signs;

(3) movement control barriers; and

(4) security fences.

d. **Parking Areas.** Areas in which vehicle parking may occur are to be specified.

7.11 **During Firing Content.** The following during firing content is to be included in all range standing orders for purpose-built ranges:

a. **Accident, Incident or Other Emergency.** The action to be taken in the event of an accident, incident or other emergency including:

(1) the actions to be taken in the event of an accident, incident or other emergency that:

(a) results in a serious injury, including the procedure for the authorisation and activation of civilian air mobile evacuation resources and the point of contact; and

(b) does not result in a serious injury.

(2) location of the nearest means of communication by which emergency services may be called.

b. **Movement Control.** Procedure for control of movement within the range danger area, including arrangements for the observation of the land, air and sea danger areas during firing;

c. **Waiting Details.** Instructions for waiting details, including use of training areas; and

d. **Cones of Fire.** Authorised cones of fire and action on the inability of a firer to achieve the required cone of fire.

7.12 **After Firing Content.** The following after firing content is to be included in all range standing orders for purpose-built ranges:

a. **Range Clearance Procedure.** The range clearance procedure.

7.13 **Range and User Specific Content.** Where relevant, the following range and user specific content is to be included in range standing orders:

a. **Ventilation.** The procedures for operation of ventilation systems to manage air quality at safe levels;

b. **Variations to Existing Policy.** Variations to existing policy may be included in range standing orders so long as the minimum requirements of this manual are not compromised. Examples of variations to existing policy include:

(1) additional range conducting officer qualification and competency requirements, including any specific range conducting officer orientation training;

(2) additional safety supervisor and shooting coach qualification and competency requirements;

(3) additional firer/operator qualification and competency requirements;

(4) additional before, during and after firing duties and responsibilities of all staff (including sentries) and all firers/operators;

(5) additional casualty management cover and equipment to be provided; and

(6) the removal and disposal of range produce, rubbish, debris and expended cartridge cases.

c. **Concurrent and Combined Use.** Orders governing the concurrent and combined use of areas within a live firing facility, adjoining ranges, adjoining facilities and adjoining training areas;

d. **Maintenance and Environmental Management Plan.** If a Maintenance and Environmental Management Plan has not been produced for the range, the following content is to be included in range standing orders:

(1) a ballistic safety maintenance schedule; and

(2) the procedure for determining unacceptable hazards from firing residue contamination and the decontamination process.

e. **Additional Inspection and Maintenance Requirements.** As required;

f. **Special Instructions.** Where relevant, the following special instructions are to be included in range standing orders for purpose-built ranges:

(1) **Unit Standing Orders.** Reference to unit standing orders that have not been included in range standing orders.

(2) **Scenario Training.** Conduct of live firing from single and multiple firing positions to single and multiple target positions during scenario training.

Health and Hygiene

7.14 As a danger exists with all indoor ranges, all personnel using the range facility are to ensure they wash their hands thoroughly with soap and water prior to eating, drinking and upon leaving the range.

SECTION 2 – Purpose-Built Range Audits

Components of the Range Audit Cycle

7.15 Audits of purpose-built ranges controlled by New Zealand Cadet Forces units are to be completed in accordance with the following provisions:

a. **Scheduled Audits.** The following scheduled range audits are to be conducted:

(1) **Daily Check.** When a range is in use, a daily check is to be carried out by the RCO before firing operations commences. The check is to ensure that the range is being presented in good order and is in all respects fit and safe for use.

(2) **Three Month Audit.** A three month audit of each range is to be arranged by the Range Controlling Authority (RCA). The audit is to ensure that 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 the maintenance requests are submitted promptly and are followed up until completed. The RCA may require more frequent audits during periods of high use.

(3) **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. The annual audit is to include (but is not limited to) the following:

(a) a detailed review of the Range Standing Orders to ensure that they are correct, current and conform to the requirements of Section 2 – *Range Standing Orders* of this chapter;

(b) a detailed inspection of the range infrastructure to ensure that the range is being used in accordance with range standing orders and its design limitations;

(c) a detailed check that safety critical ballistic infrastructure is being maintained in accordance with minimum design specifications;

(d) a check that the provisions of the Maintenance and Environmental Management Plan for the range is being met;

(e) determination and promulgation of any restrictions necessary for the continued safe use of the range; and

(f) raising and distribution of the *Range Audit Report* and *Range Safety Certificate*.

(4) **Five Year Audit.** A five year audit of purpose-built ranges controlled or used by New Zealand Army (including New Zealand Army controlled purpose-built ranges used by civilian shooting associations and clubs, and non-New Zealand Defence Force Ranges used by New Zealand Army) is to be completed by Weapons and Ranges Branch. So long as the five year audit is completed between April and June it may be considered the annual audit for that year. The five year audit is to include (but is not limited to) the same considerations as at paragraph 2301.a.(3)(a) to paragraph 2301.a.(3)(e), of this section.

b. **Unscheduled Audits.** Unscheduled range audits are to be conducted on occurrence of the following:

(1) Immediately following any serious injury and/or significant damage to equipment;

(2) Any time the *Range Safety Certificate* is suspended because of entire range structure fails to meet the minimum acceptable specification; and

(3) On direction by the RCA.

c. **Special Audits.** The RCA will conduct special audits for the following (Note that the results of special audits are to be promulgated as temporary or interim safety in training policy unless otherwise stated):

(1) Introduction of a new shooting practice or shooting system that does not meet the design limitations of the range.

(2) Whenever it is considered that use of the range is unsafe (Note that the results of this special audit are to be promulgated by a *Range Audit Report* and *Range Safety Certificate*.

Range Auditing Officers

7.16 **General.** Purpose-built range practices of any type may only be conducted on purpose-built ranges declared safe by Weapons and Ranges Branch, or an appointed a range auditing officer, in accordance with the requirements of:

a. this publication;

b. current range standing orders authorised by the RCA; and

c. temporary or interim safety in training policy, or range safety notices, published by HQ NZCF training cell.

Appointment and Training

7.17 The range auditing officer is to:

a. be appointed by the relevant RCA; and

b. have attended a Range Advisory Officers Seminar conducted by Weapons and Ranges Branch within the previous five years.

Range Audit Reports and Range Safety Certificates

7.18 The *Range Audit Report* and *Range Safety Certificate* to be used for all range audits are as follows:

a. **Range Audit Report.** The *Range Audit Report* is to be customised to match the range being audited. Where necessary, digital photographs, plans or design drawings showing range structures and the range danger area and copies of agreements are to be included.

b. **Range Safety Certificate.** A *Range Safety Certificate* is to be raised and is to be cancelled or suspended as follows:

(1) **Cancellation.** The RCA is to immediately cancel the Range Safety Certificate on occurrence of the following:

(a) At the date and time the *Range Safety Certificate* expires.

(b) When an entire range structure (for example, the impact slope along the whole length of the stop butt) fails to meet the minimum acceptable specification. If only part of a range structure (for example, only the impact slope of the stop butt in Lane 1) fails to meet the minimum acceptable specification it is acceptable for only Lane 1 to be closed until the minimum acceptable specification has been re-established.

(c) At any other time cancellation of the *Range Safety Certificate* is deemed appropriate.

(2) **Suspension.** The RCA is to immediately suspend the Range Safety Certificate on occurrence of the following:

(a) a serious injury.

(b) a natural event likely to have caused damage to the range infrastructure (for example, an earthquake or flood).

(c) at any other time suspension of the *Range Safety Certificate* is deemed appropriate.

SECTION 3 – Range and Danger Area Signs

Introduction

7.19 Range and danger area signage is required for all ranges. Signs need to be of durable construction to resist weathering. The signs warn people approaching the site of the presence of a shooting range, the range danger area and the dangers of entering it.

Main Facility Sign

7.20 The range facilities main sign needs to be large and clearly visible. It should be located at a commonly used access point (e.g. main gate area or entranceway) and clearly identify the site as a shooting range. It should contain, as a minimum, the range facility name, range operator contact information (e.g. phone number or P.O Box etc) and a warning that the person is entering a shooting range.

Perimeter Signs

7.21 The perimeters of the range are defined as the boundaries that enclose the active range area and the danger area.

7.22 The perimeters of all range(s) need to be identified with warning signs. These signs are intended to alert people as to the existence of the range and the range danger area boundaries. Signs need to face outwards away from the range(s). They instruct unauthorised persons not to enter the area.

7.23 The perimeter signs must not be obscured by brush or tree growth. Growth that obscures the signs must be cleared away. The signs need to be always visible, being replaced or repaired as necessary.

7.24 The Range Operator needs to check regularly and certainly annually to ensure that all perimeter-warning signs are in good order.

7.25 Shooting organisations have developed standard signage for the use of Range Operators. As well as perimeter signs, ranges fly a warning flag when in operation.

Range and Danger Area Sign Dimensions

7.26 The following table gives the dimensions of the signage used on a shooting range:

Modular Height of Safety Sign Plate.	Diameter or Height of Geometric Shape of Safety Sign Plate.	Height of Lower Case Letters.
Column 'a'	Column 'b'	Column 'c'
75	60	5.0
100	80	6.6
150	120	10
225	180	15

Modular Height of Safety Sign Plate.	Diameter or Height of Geometric Shape of Safety Sign Plate.	Height of Lower Case Letters.
Column 'a'	Column 'b'	Column 'c'
300	240	20
600	480	40
750	600	50
900	720	60
1200	960	80

7.27 All dimensions are in millimetres unless otherwise stated:

a. **Column 'a'** = the modular height of a sign plate, for safety sign or supplementary sign.

b. **Column 'b'** = the diameter or height of the geometric shape of a safety sign.

c. **Column 'c'** = the height of the lower case letters of the signs.

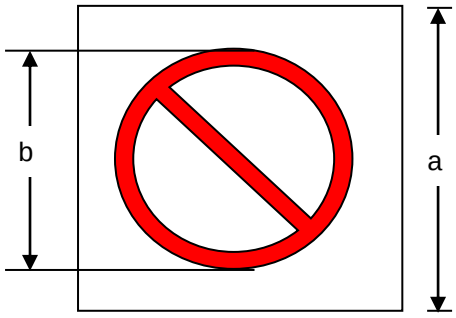


Fig 115

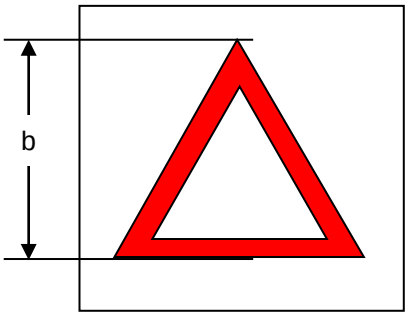


Fig 116

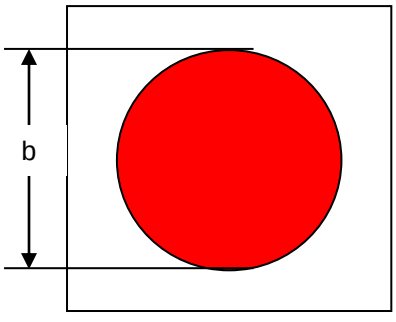


Fig 117

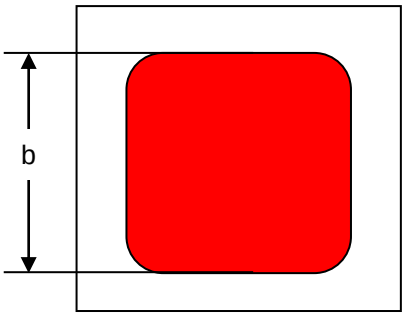


Fig 118

7.28 The following is an example of the Range Boundary Prohibition Sign.

Fig 119 - Range boundary prohibition sign

7.29 The following are examples of other Prohibition Signs.

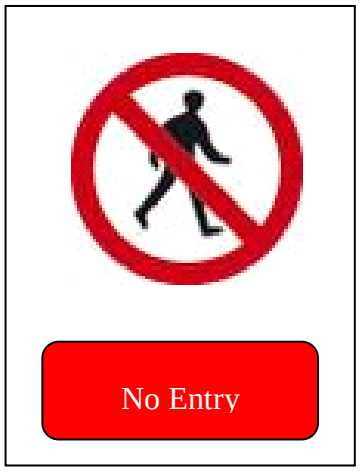


Fig 120 - No entry sign

Fig 121 - No smoking sign

Fig 122 - Use ear protector sign

RIMFIRE PRACTICES ON

>INSERT RANGE NAME<

BY NEW ZEALAND CADET FORCES

RANGE STANDING ORDERS

Published by >Cadet Unit Name< under the Authority of Cadet Force Orders, Volume 7, Chapter 3, Section 4.

>NAME<
>Rank in full<
Cadet Unit Commander
>Unit Name in full<

Dated: >Insert Mmm yy<

>INSERT UNIT NAME< RANGE STANDING ORDERS

RECORD OF AMENDMENTS

1. Proposals to amend these orders are to be forwarded direct to the Cadet Unit Commander (CUCDR) of the >Unit Name<. The CUCDR is to consider the proposal, obtaining Command comment from AC CFTSU as necessary. Following endorsement of the proposal, it is to be forwarded to HQ NZCF for approval.

2. Should a proposal not be endorsed by the CUCDR or approved by HQ NZCF, the CUCDR is to inform the originator of the reason(s) for its non-acceptance.

3. Amendments published as provisional amendments to these orders have the full effect of formal amendments once authorised by the Commandant NZCF.

Amendment		Subject	Initials	Date
No.	Date			

>INSERT UNIT NAME< RANGE STANDING ORDERS

References:

The following references give detailed information for the planning and conduct of small arms purpose built ranges however, no publication should be read in isolation as they all have important information for the safe planning and conduct of Purpose Built No Danger Area Range Practices.

A. Cadet Force Orders, Volume 2, Chapter 3.

B. Cadet Force Orders, Volume 7, Chapter 3.

C. NZCF 151, Firearms Training Manual, Part 7.

>INSERT UNIT NAME< RANGE STANDING ORDERS

DISTRIBUTION LIST

Unit/Organisation	Copy Number
>Unit Name<	1
S7 TDO Headquarters New Zealand Cadet Forces	2
>Area< Cadet Force Training & Support Unit	3
Civilian Range Owner/Operator	4

>INSERT UNIT NAME< RANGE STANDING ORDERS

CONTENTS

>INSERT UNIT NAME< RANGE STANDING ORDERS

SECTION 1

GENERAL

Introduction

1000. These Range Standing Orders are written IAW the New Zealand Cadet Forces (NZCF) rules, regulations, policies and procedures at Refs B & C where they pertain to NZCF live firing practices on Cadet Unit owned and operated ranges.

Status of Orders

1001. These orders cancel all previous orders and instructions for >Range Name< Range for NZCF live firing practices only. In the event of any conflict between these orders and any other NZCF publication, clarification is to be sought from S7, HQ NZCF.

1002. The following paragraphs detail the >Range Name< Range Standing Orders for NZCF live firing practices and are not intended for use by any other organisation either military or civilian, except where these Range Standing Orders are written on behalf of the civilian range owner/operator. All NZCF personnel using >Range Name< Range for any activity are to comply with these orders. **All Range Conducting Officers are to read and understand these orders prior to conducting any live firing practices on >Range Name< Range.**

1003. A copy of these orders and Refs B & C are to be available to the RCO on the range.

1004. Live firing practices are only to be conducted by, commissioned NZCF RCOs and NZCF RF Staff who have qualified on the **NZCF** Range Conducting Officers course and who possess a **current** NZCF 40, Course / Activities Warrant.

Range Description

1005. >Range Name< is a >insert description of the range and surroundings etc<.

Authority to Live Fire

1006. Each live firing activity is to be planned and conducted as a purpose-built range practice IAW Ref B, these orders, and Ref C where they pertain to NZCF live firing activities.

AFNZ 199 - *Range Safety Certificate*

1007. It is the responsibility of the CUCDR to ensure that, before a range booking is confirmed and a live firing practice authorised, the range has a current AFNZ 199 - *Range Safety Certificate*.

Limitations

1008. Live firing practices are only to be conducted on the range during daylight hours on an outdoors range. Low light, night firing or firing through obscuration is **NOT** permitted.

1009. Each firing detail is to be a maximum of **six** firers only.

Approved Firing Postures

1010. The below firing postures can be conducted on the range:

a. prone supported and unsupported;

b. sitting unsupported; and

c. kneeling unsupported.

Dry Firing Training Tests (DFTTs)

1011. **All** firers are to **qualify** on Dry Firing Training Tests (DFTTs) IAW Ref B prior to any live firing.

Authorised Live Firing Practices

1012. Only **authorised** live firing range practices are to be conducted. IAW Ref B, the following live firing activities are permitted to be conducted on the range:

a. grouping and zeroing;

b. application of fire practices;

c. snap practices; and

d. authorised competition shooting and competition practices.

1013. Cross-lane firing, that is the engagement of targets outside the firers' specific lane, is **NOT** permitted.

1014. Requests to conduct .22 inch live firing practices which are **NOT** authorised at Ref B are to be submitted to the CUCDR. The CUCDR **is to** seek Command comment from AC CFTSU and forwarded to the S7 TDO, HQ NZCF for approval.

Range Documentation

1015. The following documents are to be located at the range and accessible by the RCO:

a. these Range Standing Orders;

b. Ref B; and

c. a copy of the current NZCF 33, General Range Instruction.

>INSERT UNIT NAME< RANGE STANDING ORDERS

SECTION 2

ADMINISTRATION

Command and Control

2000. Command & control and responsibility for the day to day management, maintenance and administration of the range has been delegated to the Cadet Unit Commander.

Authority to use the Range for Live Firing

2001. Only Officers and Cadets who are members of the >Unit Name< are permitted to use the range to conduct organised unit live firing practices IAW these orders. Other NZCF units may, on application to the CUCDR >Unit Name<, be authorised to use the range subject to the appointed RCO receiving a full familiarisation briefing by the CUCDR >Unit Name< (or delegated NZCF Officer experienced with the range) on the range, its use, and these orders.

Administrative Responsibilities

2002. Responsibilities for >Range Name< Range and facilities are held with the CUCDR and includes the;

a. maintenance of the range area (including danger boards/signage/flag poles and barriers), range structures and facilities;

b. co-ordination and control of the range in accordance with Refs A and B; and

c. maintenance of the Range Box to ensure it contains:

(1) A copy of these Range Standing Orders.

(2) Copies of the NZCF Accident Register.

(3) Copies of the Range Clearance Certificate.

(4) Red/Orange Fluro range flags x qty.

(5) Quantity of targets and patches (if required).

Responsibility of Range Users

2003. The >Range Owner/Operator Name< is responsible for the following:

a. submitting a NZCF 33, General Range Instruction (GRI) to the AC CFTSU for approval;

b. familiarising themselves with these orders and ensuring that they are complied with;

c. security of firearms and ammunition while on the range IAW Ref A;

d. ensuring a qualified and **current** Range Conducting Officer (RCO) is in attendance at any live firing practice;

e. conducting the live firing practice IAW Refs B & C and these orders;

f. reconditioning the range at the completion of the live firing practice, including collecting all empty cartridge cases and picking up all rubbish;

g. ensuring the range area is secured after the live firing practice is completed; and

h. refurbishing the Range Box as and when required.

Range Conducting Officer Responsibilities

2004. The RCO is appointed by the CUCDR and is required to be present at the live firing practice. The RCO is to be qualified and **current** IAW Ref B and para >insert para number< of these orders and is responsible for the conduct and overall safety of the range practice. The RCO is also to ensure that:

a. he/she has read and understands these orders and ensures that they are complied with;

b. the range box, keys to the range have been uplifted from the range owner/operator;

c. all personnel involved in the live firing practice are conversant with these orders;

d. all pre-live firing practice administration, setting up of the range, conduct and overall safety of the live firing practice, and the range closing procedures, are conducted correctly;

e. safe handling and accounting of all firearms and ammunition is conducted at all times at the range before, during and after the live firing practice;

f. shooting coaches, safety supervisors, ammunition safety supervisors, waiting detail supervisors, medic and other range staff as required are appointed and **fully briefed** on their duties IAW Ref C as appropriate;

g. the range and surrounding areas are left in a clean and tidy condition, all brass is collected and any stores returned;

h. the range clearance form is completed and returned to the range owner/operator; and

i. the range box, keys to the range have been returned to the range owner/operator.

2005. Where more than one qualified person is appointed as RCO for a live firing practice, only that person who is currently conducting the live firing practice, regardless of rank, is the RCO.

2006. The ratio of Safety Supervisor to firers is to be IAW Ref B.

Range Bookings

2007. Once the use of the range has been authorised by the CUCDR and any conflicts resolved, the range booking form at Annex B to these orders is to be completed and sent to the CUCDR (Attn: Unit Training Officer) by email >insert email address<.

2008. The Unit Training Officer is to confirm availability of the range and approve the booking by return email. All range bookings **are to be confirmed** by the Cadet Unit - negative vetting is **not** to be deemed approval to conduct the activity.

NZCF 33, General Range Instruction

2009. A NZCF 33, General Range Instruction (GRI) is required to be completed for each live firing practice conducted on the range. The GRI is to be completed by the RCO and submitted to the appropriate CUCDR for sign off as the Officer in Charge of the Practice (OIC Prac). The completed GRI is to be forwarded to the Area Coordinator CFTSU for approval and a copy is to be forwarded to the CUCDR (Attn: Training Officer) - negative vetting of the GRI **is** deemed approval to conduct the activity.

Medical Cover

2010. IAW Refs B and C, a person who holds a **current** first aid certificate or higher qualification **is to be** in attendance during a live firing range practice.

2011. Prior to the commencement of a live firing range practice, the location of the first aider, medical equipment, safety vehicle, keys to the safety vehicle and means of communication with emergency services is to be made known to all participating personnel.

2012. A general purpose first aid kit is to be located in close proximity to the firing point. Refer to Cadet Force Orders, Volume 7 Section 4, Annex B for contents of a first aid kit.

2013. In the case of a **minor** injury the RCO is to consider the need to request a civilian ambulance via the 111 service. If an ambulance is not required, the safety vehicle is to be used to transport the minor injury casualty to the nearest medical provider. **If any doubt exists as to the seriousness of the injury, a civilian ambulance is to be requested via the 111 servi*ce*.**

2014. In the case of a **serious** injury a civilian ambulance is to be requested via the 111 service. If the injury is as a result of an accident involving firearms the RCO is to carry out the procedures detailed in paragraph 2028 of these orders.

Inspection of Firearms, Equipment and Ammunition

2015. The following inspections are to occur immediately before, during, and after live firing activities:

a. **Before.** Immediately before issue of any live ammunition for a live firing practice, the RCO is to:

(1) Ensure that all rifles, ammunition containers and magazines, are inspected. The inspection is to ensure that rifles are safe and serviceable and that no unauthorised ammunition is present during the live firing practice.

(2) Direct the ammunition safety supervisor to check the ammunition to ensure that it does not contain unauthorised ammunition types for the live firing practice to be conducted.

(3) Ensure that barrels are pulled through in accordance with the standard procedure for preparation of a rifle before live firing practice.

b. **During.** The following inspections are to occur during the live firing practice:

(1) If firers are required to leave the firing point or to move forward to examine targets, or any other personnel are to move forward of the firing point, then rifles **are to be** unloaded, inspected and cleared with the Chamber Safety Device (CSD) inserted before any movement forward of the firing point occurs.

(2) If non-firing personnel are to move forward to change targets or replace a firers' target that has fallen off, then the actions in sub, sub-para (1) above **are to be** carried out with the addition that the firers are to stand clear of their firearms and the firearms are **not** to be touched until all personnel are back behind the firing point.

(3) If for any reason personnel leave a live firing practice before it has been completed, each individual or group is to be inspected and given the Range Warning IAW >insert para number< of this section.

c. **After.** Immediately after the live firing practice, the command **'FOR INSPECTION – PARALLEL ARMS'** is to be used. The RCO is to ensure that all rifles, ammunition containers and magazines, pockets, bags and packs, all other relevant equipment, are inspected before leaving the range. The inspection is to ensure that all weapons are safe and that all unexpended ammunition has been collected and returned by the range staff to the ammunition point.

Range Safety Briefings

2016. The RCO is to conduct a Participants Range Safety Brief immediately prior to the commencement of the live firing practice. **All** participants (firers, range staff and spectators) **are to** attend. A 'Participants Range Safety Brief' template can be found in the NZCF 151, Firearms Training Manual, Part 5, Section 3, Annex F.

Waiting Details

2017. Waiting details are to be located in the designated waiting area/room or to the rear of the firing point and under control of the waiting details Officer / SNCO. Waiting details are to wear hearing protection if to the rear and in close proximity of the firing point and are to observe the actions of the detail on the firing point so that they become familiar with the format of the practice. Only the RCO, safety supervisors/shooting coaches and firers are allowed on the firing point.

Use of Range Flags or Lights

2018. The RCO is to ensure that, prior to a live firing practice a range in use flag is raised on the flag pole/s located >location of flag(s)<. The range in use flags are to be in the raised position **30** minutes prior to commencing live firing and lowered when live firing has been completed. >insert operation of lights, their meaning and their use<.

Hearing Protection

2019. To prevent damage to hearing, the RCO and all range staff are to ensure that all personnel participating (firers, range staff and spectators) in a live firing practice are correctly wearing authorised hearing protection during live firing (**minimum Class 5 earmuffs or earplugs**). The RCO is also to ensure that all personnel exposed to hazardous noise of live firing:

a. are informed of the hazards and reasons for adequate hearing protection; and

b. correctly fit and wear the earmuff hearing protection so that the ear cups of earmuffs are worn in direct contact with the skin and hair surrounding the ear. The seal between the earmuff and the hair and skin around the ear is **not** to be broken or interfered with at any time, for example wearing the ear cup over a jungle hat rim, balaclava or baseball style cap. The wearing of spectacles is the **only** exception.

Ballistic Eye Protection

2020. The wearing of ballistic eye protection is at the discretion of the RCO. If the RCO believes the risk of possible backsplash exists, then ballistic eye protection can be worn.

Control of Hazardous Substances / Health and Safety

2021. Lead, unburnt propellant, accumulated dust and carbon monoxide are potentially hazardous emissions from firearms during live firing. NZCF members are **not** to be exposed to firing for more than 3 sessions per week and an average total of up to 500 rounds per week / 26000 rounds per year.

2022. Eating, drinking, gum chewing etc, are forbidden at the range. All personnel are to be advised that they are to wash their hands before eating or drinking when they leave the range.

Communications

2023. The RCO is to have on his/her person a cell phone to provide alternate communications should their main form of communications fail. Live firing is not to occur if no form of communication is available on the range.

Vehicles On/At the Range

2024. All vehicles (with the exception of the safety vehicle IAW para >insert para number< of these orders) are to be parked in the designated parking area >insert location<. No vehicle is to be driven on any grassed areas.

2025. A vehicle is to be identified as the safety vehicle for the purpose of transporting a **minor** injury casualty to the nearest medical provider and is to be located >insert location<. The keys are to be in the vehicle or in the safety vehicle drivers' possession if the RCO does not consider it prudent to leave the keys in the vehicle.

Misfires, Stoppages or Obstructions

2026. In the event of a misfire, stoppage or obstruction, the firer is to maintain the hold and aim and is to raise a leg (prone position only) and call out 'Stoppage'. The following action is to occur:

a. **Misfires, Stoppages or Obstructions**. When told by the RCO, shooting coach or safety supervisor to 'carry on', the firer is to remedy the misfire or stoppage with the rifle pointed at the target area IAW the procedures contained in the NZCF 151, Firearms Training Manual. If the misfire, stoppage or obstruction cannot be remedied by the approved remedial action, the RCO is to carry out the actions IAW NZCF 151, Firearms Training Manual, Part 2, Lesson 4, Paragraphs 2.87 – 2.88.

Misfired Ammunition

2027. Under no circumstances are attempts to be made to re-fire misfired rounds. This includes unfired cartridges which prove difficult to extract. Such ammunition is to be passed to the RCO who is to hand them to the AC CACFTSU for return and disposal by a qualified ammunition technician or ammunition technical officer.

Actions in the Event of a Serious Accident Involving Firearms or Ammunition

2028. The RCO is to take the following action in the event of any accident involving firearms:

a. **On Site Action.** The Officer In Charge or the Range Conducting Officer (or next senior person in the event of death or injury) is to:

(1) Immediately stop the practice; clear firearms not involved and remove all personnel from the firing point;

(2) First aid is to be given to the injured ASAP and an ambulance will be requested, the phone number is 111;

(3) Ensure that the rifle involved and all fragments are left untouched and that no attempt is made to clean them or coat them with any preservative;

(4) Inform the NZ Police;

(5) The COMDT NZCF will be advised through the Area Coordinator ASAP; and

(6) A written report will be supplied to the AC within 24hrs.

Toilet Facilities

2029. Personnel are to use the toilets located >insert location<.

Range Clearance

2030. A range clearance form at Annex C to these orders is to be completed by the RCO and emailed to the CUCDR (Attn: Training Officer) no later than the next working day or a hard copy left in the range box at the conclusion of the range practice.

2031. The following verbal range warning **IS TO BE** given by the RCO to **ALL** participants including range staff and spectators after all ammunition and ammunition produce has been handed in. The below range warning is a legal requirement and is to be read out word for word. Do **NOT** try and memorise it.

RANGE WARNING

"YOU ARE NOT TO LEAVE THE RANGE OR TRAINING AREA WITH ANY AMMUNITION OR AMMUNITION PRODUCE IN YOUR POSSESSION WITHOUT PROPER AUTHORITY. IF YOU HAVE NOW OR LATER DISCOVER ANY IN YOUR POSSESSION, YOU ARE TO IMMEDIATELY HAND IT OVER TO A SUPERIOR OFFICER. CONDUCT YOUR FINAL CHECK. YOU HAVE BEEN WARNED."

>INSERT UNIT NAME< RANGE STANDING ORDERS

SECTION 3

RANGE SAFETY

Range Discipline

3000. The safety of all participants and spectators requires continued and careful attention to firearms safe handling and caution in moving about the range. All firearms, even when unloaded, are to be handled with the greatest of care in a safe manner and self-discipline is necessary on the part of all. Where self-discipline is lacking, it is the RCO's duty to enforce discipline and it is the duty of participants to assist in such enforcement.

3001. If anyone believes a hazard exists, these orders are not being complied with or an unsafe practice has or is about to occur, they are to order **"STOP"** and make their concerns known to the RCO. This command can be given at any time by anyone, but only the RCO is permitted to give the command for firing to continue.

3002. It is the responsibility of the RCO that all firers appear at the range dressed appropriately for the live firing practice being conducted. The wearing of jandals or thongs, and firing in bare feet, is **prohibited**.

Authorised Firearms

3003. Only the NZCF current in-service .22 calibre long rifle issued by the NZDF is permitted to be used on the range. However the use of privately owned .22 calibre long rifles can be used on the range **only** with the range owner/operators authority. This authority can be obtained by following the normal range booking procedure and to be included in the NZCF 33, General Range Instruction. The use of the .22 Magnum, is **strictly forbidden**.

Authorised Ammunition

3004. Only NZDF supplied or authorised .22 calibre subsonic hollow point or solid nose ammunition is permitted to be used on the range. The use of any other ammunition nature, including .22 Magnum, is **strictly forbidden**.

Authorised Targets

3005. Only the targets authorised by HQ NZCF are to be used on the range. Targets can be ordered through the AC CFTSU and HQ NZCF.

3006. Targets are to be placed centrally on the target boards at the target line and affixed by staples, tape or blue-tac. The placement of targets in any other location is prohibited.

3007. **Cadets are not to shoot at any target that shows or represents the human form.**

3008. No rifle shall be in the **loaded** or **action** state or handled by any person when personnel are forward of the firing point. No one is to go forward to the targets until all rifles have

been unloaded and inspected and with CSDs inserted, and permission to go forward has been granted **only** by the RCO.

Conduct of the Live Firing Practice

3009. Before the start of any live firing practice, the RCO is to:

a. ensure the flag(s) and barrier/danger board is positioned correctly;

b. ensure all participants have been properly briefed IAW para >insert para number< of these orders;

c. conduct a visual check of the range area from the firing point to ensure it is clear of any personnel, stock, equipment and vehicles;

d. ensure that all points of access to the range area are controlled or able to be observed; and

e. ensure that the movement of all personnel within the range area is controlled.

3010. Rifles are only to be loaded at the firing point and only after the command **'LOAD'** is given by the RCO. Rifles are to be unloaded at all other times. Barrels are to point at the target area at all times, whether loaded or not.

3011. When the command **'STOP'** is given, shooting is to stop immediately, firers are to attempt to apply safety catches, rifles are to be placed on the ground and firers are to wait for further commands from the RCO. Live firing may only be resumed on command given by the RCO.

Intrusion into the Range Area

3012. If persons, vehicles, animals or low flying aircraft are seen to enter, or are about to enter the range danger area, any person can immediately order, **'STOP'**. The RCO is **not** to continue the live firing practice until the intrusion has been cleared.

Inability to Achieve the Cone of Fire

3013. Should any firer identify themselves, or is identified, as having fired a shot that has not been captured by the Cone of Fire (CofF) i.e. the shot has struck outside a one meter radius from the target centre (± 40 mils in elevation and azimuth), but **has** been captured by the mantlet, stop butt or bullet catcher the following is to occur:

a. the firer is to be stopped and the RCO informed;

b. the firer's next shot is to be observed and if it falls within the relevant CofF (strikes the target) the firer is permitted to continue the practice;

c. if the next round does not fall within the CofF, a coach is to be allocated to assist the firer over the next three rounds; and

d. if the strike does not improve the firer is to be removed from the detail and undergo further firearms training/zero/grouping practice as required until such time as a qualifying group can be achieved.

ANNEX A TO
RANGE STANDING ORDERS
DATED >INSERT DATE<

LIVE FIRING RANGE DANGER AREA

>Insert picture or photo of Range Danger Area<

ANNEX B TO
RANGE STANDING ORDERS
DATED >INSERT DATE<

>INSERT NAME OF RANGE< RANGE BOOKING FORM

From:	>Insert booking units name<

To:	>Insert range owner/operator name< - Attn: Training Officer

Submitted by:		**Date:**	

Phone:		**Mobile:**		**Email:**	

Auth by (CUCDR):		**Sign:**		**Date:**	

From (date & time):		**To (date & time):**	

OUTLINE OF ACTIVITY

TRAINING OFFICER COMMENTS / ACTION
_____ _____ **Date** **Signature**

RESTRICTIONS / COMMENTS

CADET UNIT ACTION

APPROVED / NOT APPROVED

(Delete as applicable)

Date	**Signature**

ANNEX C TO
RANGE STANDING ORDERS
DATED >INSERT DATE<

>INSERT NAME OF RANGE< RANGE CLEARANCE CERTIFICATE

Unit: _____ **Dates of Use:** _____

1. The items listed below are to be completed prior to signing this form:

   a. the RANGE-IN-USE signs are to be collected and returned to the store; ☐

   b. the red flags (if applicable) are to be lowered, folded and placed in the store; ☐

   c. all spent brass is to be collected and placed in the appropriate spent brass box; ☐

   d. all target-backing boards are to be patched out or recovered with new backing boards; ☐

   e. the firing point and butts/target area is to be clean and tidy; ☐

   f. all spent ammunition boxes have been checked and folded flat to ensure no ammunition is present and placed in a clear plastic bag and placed in a rubbish bin; and ☐

   g. all other rubbish has been placed in the rubbish bin. ☐

2. Once complete, this form is to be placed in the box provided at the firing point.

3. I certify that the range has been cleared IAW these instructions.

Sign: _____

Date: _____

Unit: _____

Contact Number: _____

Name and Rank of RCO (printed): _____

Notes:

1. If any problems are experienced with the range please contact the Cadet Unit Commander on **>insert contact number<**.
2. Or leave a message on the back of this form.

3. Remember; leave the range as you would like to find it.

ANNEX D TO
RANGE STANDING ORDERS
DATED >INSERT DATE<

>Insert Range Name< Range Safety Rules

1. The following Range Safety Rules are to be followed whenever the range is in use:

   a. when the range is in use it shall be at all times under the command and control of the Range Conducting Officer (RCO), whose authority is absolute and all persons on the range shall act under his or her direction;

   b. the RCO shall be responsible for the observance of these rules and for the reporting of any breech to the CUCDR without delay;

   c. all persons on or near the firing point are to wear Class 5 Earmuffs or Class 5 Earplugs;

   d. no shooting shall take place on the range except under the control of a RCO holding a **current** NZCF 40, Course / Activities Warrant;

   e. all rifles on the firing point are to be pointed at the target area at all times;

   f. rifles are only to be loaded on the command of the RCO;

   g. no person shall move forward of the firing point until all rifles have been cleared by the RCO and then only on the RCOs command;

   h. no person(s) shall touch or handle any rifle(s) when personnel are at the target area;

   i. ammunition is to be issued to the firers only on the order of the RCO;

   j. no rifles are to be taken to or near the ammunition point at any time;

   k. no rifle is to be removed from the firing point until it has been inspected and cleared by the RCO;

   l. when rifles are not loaded they are to have the Chamber Safety Device inserted;

   m. all rifles are to be treated as if they are loaded; and

   n. only NZDF issued sub-sonic ammunition is to be used on the range.

By Order:

_____ (Signature)

_____ (Name)

_____ (Rank)

Cadet Unit Commander (Appointment)

ANNEX E TO
RANGE STANDING ORDERS
DATED >INSERT DATE<

NZCF ACCIDENT REGISTER

Name of Injured Person	Nature of Injury or Illness	Date of Injury or Illness	Location of Injury or Illness	Nature of First Aid Treatment given and date
