

2017

Range Safety Officer Instructions

NL 223



References

A-CR-CCP-177/PT-001
CANADIAN CADET MOVEMENT
MARKSMANSHIP PROGRAM REFERENCE MANUAL
2005-09-14

A-CR-CCP-801 / PG-001
ROYAL CANADIAN AIR CADETS PROGRAM PROFICIENCY LEVEL ONE –
QUALIFICATION STANDARD AND PLAN
SECTION 6, PO 106 FIRE THE CADET AIR RIFLE
2007-01-01

A-CR-CCP-802 / PF-001
ROYAL CANADIAN AIR CADETS PROGRAM
FIRE THE CADET AIR RIFLE DURING RECREATIONAL MARKSMANSHIP
CHAPTER 6, PO 206
2007-01-01

A-CR-CCP-601 / PF-001
ROYAL CANADIAN AIR CADETS PROGRAM
COMMON TRAINING INSTRUCTIONAL
SECTION 6, EO 106
2007-01-01

NL(8)E –Annex E Navy League Cadet Regulations
AIR/PELLET RIFLE SHOOTING
01 December 2009

Record of Changes

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PREFACE

1. This publication is intended to standardize the training for the Navy League Cadets within The Navy League of Canada and assist newly formed corps with the optional training of marksmanship.
2. Extracts from the NL (8) E – Annex E will be inserted in the text where applicable to clarify specific subject but the NL (8) in its entirety remains the guideline when it comes to regulation and the Navy League Cadets.
3. This guide will be divided into 6 parts:
 - Part 1: Regulations and Safety
 - Part 2: Weapon Familiarization (Corps specific based on the air rifles used)
 - Part 3: Shooting Techniques
 - Part 4: Range Commands and Range Set up
 - Part 5: Coaching Techniques
 - Part 6: Marksmanship Qualification Badges and Standards
4. Parental consent forms in order for the cadets to participate in the range activities must be renewed yearly and be filed with the cadets administrative folders.

Objective

5. The object of the Air Pellet Rifle shooting program is to provide an optional subject to the Navy League Cadet Training Program Standards and help develop self-control, self-discipline and self-confidence in young people.

Definition of Concept

6. At the 1991 National General Meeting of The Navy League of Canada, the National Council authorized the firing of Air/Pellet Rifles by Navy League Cadets. The minimum standard of this optional training shall be taught and is reasonably achievable via 5 x 45 minutes periods in a class setting and 2 periods for testing purposes.
7. The firing of Air/Pellet Handguns **IS NOT** authorized and is **NOT ALLOWED.**
8. Air/Pellet Rifles used by Navy League Cadets may not have a muzzle velocity greater than 495 feet per second, and must use pellets of .177 caliber (4.5mm) or less.
9. Air Pellet Rifles with a muzzle velocity of less than 500 feet per second do not require a Firearms Acquisition Certificate. However, they are still considered firearms under the Criminal Code

Part 1 Regulations and Safety

10. GENERAL

Prior to and during any exercise in which Navy League Cadets and Air Rifles are involved, the following regulations are to be strictly adhered to.

11. All Cadets must attend an Air Rifle Familiarization Course conducted by a qualified Corps Range Safety Officer (Definition of valid RSO Qualifications are identified in Articles 17, 18 and 20) and successfully complete the practical and written exams listed in Annex A and B.
12. Cadets must not handle or be in the vicinity of any Air Rifle without the presence of a qualified RSO or Civilian Instructor.
13. No Cadet may fire any Air Rifle unless a qualified Range Safety Officer (RSO) is present.
14. The RSO is to ensure that proper range procedures, property protection and safety procedures are strictly adhered to.
15. APPOINTMENT AS RSO and QUALIFICATIONS

There may be more than one qualified RSO within each corps however the appointment of the senior RSO is the responsibility of the Corps CO. The senior RSO is usually in charge of all range activities.

16. Upon appointment of an RSO, the Corps CO shall submit to the Navy League Branch and Division, the name, rank and qualifications of the appointee as soon as the appointment is made effective. The Division shall inform National of the appointment.
17. Persons appointed as RSO's shall be Navy League Officers (including Midshipmen 20 years of age or over), Civilian Instructors, Cadet Instructor Cadre Officers, Non-Commissioned Officers of the Canadian Forces (MS or MCPL or above) trained as military RSO, Police Officers (all of whom must be deemed to be qualified as RSO), or a properly qualified civilian firearms instructor. All NL Officers or CI's must have qualified as an RSO through the Navy League of Canada or an approved RSO training establishment. The qualification of RSO is valid for an indefinite period provided the officer or CI remains current. If an RSO has not conducted a range practice for one year, then an RSO recertification will be required.
18. All CIC officers who are interested in conducting air rifle live firing practices must have successfully completed the Air Rifle RSO Course.
19. The Navy League of Canada reserves the right to verify a corps RSO's qualifications and/or suspension of RSO Qualification within the Navy League program if a corps is in violation of safety regulations.

20. OTHER QUALIFICATIONS VARIANTS

Personnel appointed as RSO must meet the following requirements in the events that they do not hold the qualifications stated in Article 17 & 18:

- a. Have a current comprehensive knowledge of orders and safety procedures for ranges;
- b. Have demonstrated an ability to organize and supervise range exercises under the supervision of a qualified Division RSO.

21. RESPONSIBILITIES

In conjunction with instructions and regulations specified for particular range operations as promulgated by the National Navy League Cadet Committee, Navy League Division or Branch, the RSO is responsible for:

- a. the safety of all personnel;
- b. implementing the policy and ensuring that the safety regulations contained in appropriate orders are observed;
- c. coordinating all operations that take place on the range;
- d. reporting all unsafe equipment or practices to the Corps CO and recommending changes to existing orders in the interest of safety; and,
- e. cancelling any range exercise which, in his/her opinion, would constitute an unsafe practice.

22. ACCIDENTS & INCIDENTS

Should an accident occur during a range exercise, the RSO shall take immediate action to ensure that prompt medical attention is rendered to injured personnel. In the event of an accident, the following actions are to be taken:

- a. Notify the Corps CO who will inform the parent or guardian of the cadet;
- b. Notify the parent or guardian if the Corps CO is not available;
- c. Notify the local Police if range is located on civilian property;
- d. Notify the CO of the unit responsible for the range if on DND property, as well as the local Police, Military Police or local RCMP Detachment; and

22. ACCIDENTS & INCIDENTS (Contd)

- e. Submit form Accident Claim Form (WC 112E League Insurance Claim Form) as soon as possible, but within 30 days of the accident. The RSO shall also submit a written detailed report covering all events to the Corps CO, Branch and Division President. A copy of this report must accompany the Accident Claim Form.
- f. Action as required IAW NL 8 Section 5 and the appropriate Annex. A range incident is defined by an action that resulted in a temporary unsafe situation.

These situations are:

- Negligent discharge of a weapon with no casualty
- Unsafe weapon handling (horseplay)
- Improper behavior on the range

In case of an Incident on the range, the RSO will:

- Call an immediate Cease Fire
- Provide immediate directions to safely rectify situation
- Remove the individual from the firing position – Prove the weapon is safely unloaded
- Debrief the individual on infraction committed
- Take notes on timings, situations and actions completed.
- Brief the CO on the incident
- Action as required IAW NL 8 Section 5 and the appropriate Annex.

23. TYPES OF AIR RIFLES

Requirements of authorized rifles:

Caliber: 0.177 (4.5 mm)

Muzzle Velocity: 495 feet per sec or less.

Mechanical Safety Mechanism (either automatic or manual)

Sights: Rear and Front sights (preferably adjustable rear sights)

Listed below is a compilation of some air rifles are approved for use: (1 Mar 2017)

Beeman 1040.....490fps
Crossman Phantom.....495fps

Note: Break Barrel, Lever Action or Pump Actions are all acceptable. Other models can be added to this list as long as they meet the criteria listed below and have been inspected by a qualified RSO:

Listed below is a compilation of the air rifles **not** approved for use: (1 Mar 2017)

Beeman SS 1000	1000fps
Beeman R1 Models.....	950fps
Crossman 795 Models.....	600fps
Daisy Winchester Models 500x,	500fps
600x,	600fps
800x,	800fps
1000x	1000fps
Daisy Powerline 953S.....	500fps

24. THE 13 COMMANDMENTS OF SHOOTING

1. Listen to the RSO at all times
2. Keep air rifle on safe until ready to shoot
3. Always point the air rifle in a safe direction
4. Never point an air rifle at anything you don't want to shoot
5. Always be absolutely sure of your target and that it has a back stop
6. Always be sure your air rifle barrel is clean and not plugged
7. Never shoot at a flat hard surface or the surface of water
8. Never lean on your air rifle or have any part of your body over the muzzle
9. Never leave your air rifle lying around – put it in a safe locked place
10. Air rifles not being used will always be unloaded
11. Carry your air rifle so you can control the direction of the muzzle
12. Always treat an air rifle as if it were loaded and ready to shoot.
13. Always wear your personal protective equipment on the range

Part 2 Weapon Familiarization (General)

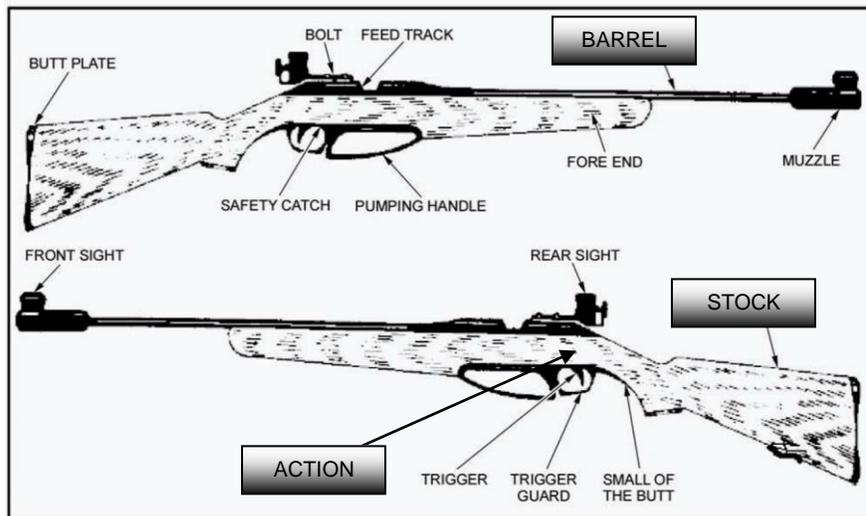
25. Main Assembly Groups of the Weapons

The Main Assembly groups of a rifle are:

The Action: Is the heart of the air rifle. It is the part of the air rifle to which the stock and the barrel are attached. It contains the functional parts which load and fire the pellet.

The Stock: The handle with which the air rifle is held. The part of the stock under the barrel is called the fore stock or fore end.

The Barrel: The metal tube through which the pellet passes when the air rifle is fired. The hole through the barrel is called the bore. After the hole is drilled in the manufacturing process, a number of small spiral grooves, running the length of the bore are cut into it. These grooves are called riflings. The ridges of metal left standing between the grooves are called lands.



26. PARTS DESCRIPTION

Below is the list of the major parts of the rifle:

Butt Plate (End of the butt). It is part of the rifle directly in contact with the marksman's shoulder. It is adjustable in length with the addition of butt spacers. When fitted properly, the butt plate aids in achieving a snug fit and a consistent placement of the rifle into the shoulder;

Spacers. Plastic inserts that can be added or removed from the butt plate to vary its length. To add or take away butt spacers, simply use a screwdriver to loosen the butt plate and slide in/out the amount of spacers desired;

26. PARTS DESCRIPTION (CONT)

Small of the Butt (Pistol Grip). Curved area directly behind the trigger guard where the hand controlling the trigger grips the rifle;

Trigger. Movable device that releases a spring and sets off the rifle mechanism.

Trigger Guard. Metal area that surrounds and protects the trigger;

Trigger Lock: Safety mechanism used in the transport and storage of the weapon providing added security and safe handling.

Safety Catch. This is a mechanism that, once engaged, prevents the rifle from firing by locking the trigger in place. It is a cross bolt type device located on the trigger guard. The black side indicates that the rifle is unable to fire; the red side indicates the rifle is ready to fire. It should be ON (no red) at all times, except when firing;

Bolt. Metal lever used for opening or closing the rifle mechanism. It must be in the closed position in order to fire.

Pump Lever. Metal lever used to compress the air required to fire the pellet. Whenever the rifle is in a “safe rifle status”, the pump lever should be left partially open;

Front Sight. Global front sight that uses aperture inserts;

Rear Sight / Diopter. Micrometer sight adjustable for wind and elevation. It is easily attached to the metal rail located above the action. This rail allows you to slide the sight forward or backward in order to maintain proper eye relief.

Muzzle. Front end of the barrel;

Feed Track. Delicate area where the pellet is inserted manually onto the single pellet adapter;

Single Pellet Adapter. Plastic clip that aids in placing a pellet in the chamber;

Chamber. Place where the pellet is held before firing.

NOTE:

Since each weapon is slightly different the safety catch mechanism will be located in different locations depending on the model used.

Ensure that your cadets are able to complete the practical exam on all weapon types carried by the corps.

Part 3 Shooting Techniques

27. GENERAL

This section deals with all the marksmanship skills required for proper firing. They can be divided into five principles as follows:

- a. Position;
- b. Holding;
- c. Breathing;
- d. Aiming; and
- e. Trigger Control.

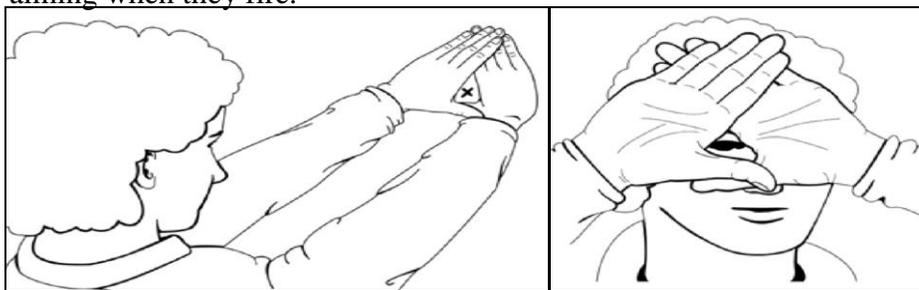
28. AIMING

Everyone has a master (or dominant) eye which is stronger than the other one. This is the eye to be used when aiming. The master eye is the brain's primary source for the visual image of what we see. The non-master eye is used primarily for depth perception or sense of direction.

29. The master eye must be determined before individuals begin firing. It should be noted that the master eye is not always on the same side of the body as the writing hand.

To determine the master eye, cadets should follow the steps listed below:

- a. Select a small object (i.e., the corner of a wall) at least five (5) metres away;
- b. Face the object and extend both arms in front of their body towards the object;
- c. With both eyes open, form a small, tight opening around the object with their thumbs and index fingers;
- d. Look at the object through the opening with both eyes open and draw both hands back toward their face. Ensure that the object remains centred through the opening of their thumbs and index fingers; and
- e. They should now be looking through the opening at the object with one single eye – the stronger of the two. This is their master eye. They should always use this eye for aiming when they fire.



NOTE

If the master eye is on the opposite side of the body than the writing hand, it is advisable that cadets change shoulders and fire with their opposite hand and use their master eye. This should not however be done at the expense of the cadet's comfort. If changing shoulders in order to accommodate the master eye proves uncomfortable, cadets should fire the way they feel most comfortable.

30. POSITIONS

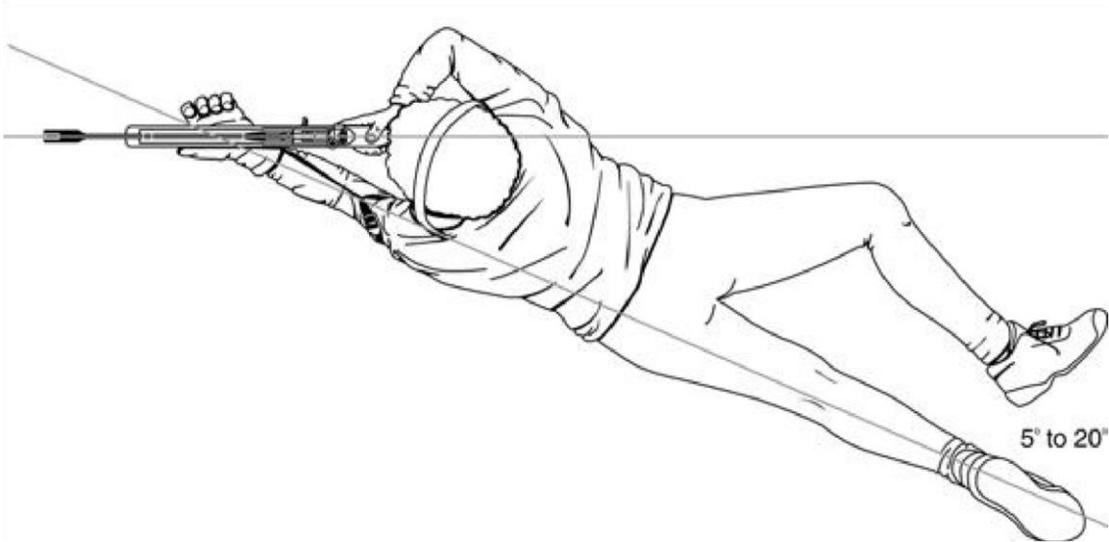
Obtaining a good prone position is one of the most, if not the most important principle of marksmanship. A good prone position helps to maintain comfort and stability during the firing session. Although an excellent position will not guarantee an excellent performance, a poor position can almost assure a substantially negative effect on results. The position will allow holding and aiming to be achieved with as little movement and muscular tension as possible. It should be natural, without strain, comfortable, such that body weight is equally distributed; and consistent throughout the relay. The standing and kneeling positions also exist but are considered advanced skills that will be developed with the cadet program. Navy League cadets will focus on the prone position.

31. The description and characteristics of a good prone position are as follows:

If left handed, see in brackets.

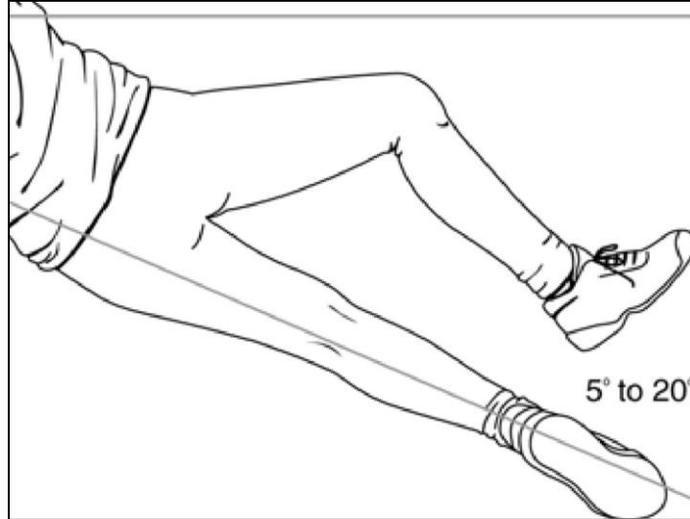
The body should form a 5-20° angle to the line of sight;

- a. The body should not be twisted and the spine should be straight;
The left (right) leg should be parallel with the spine

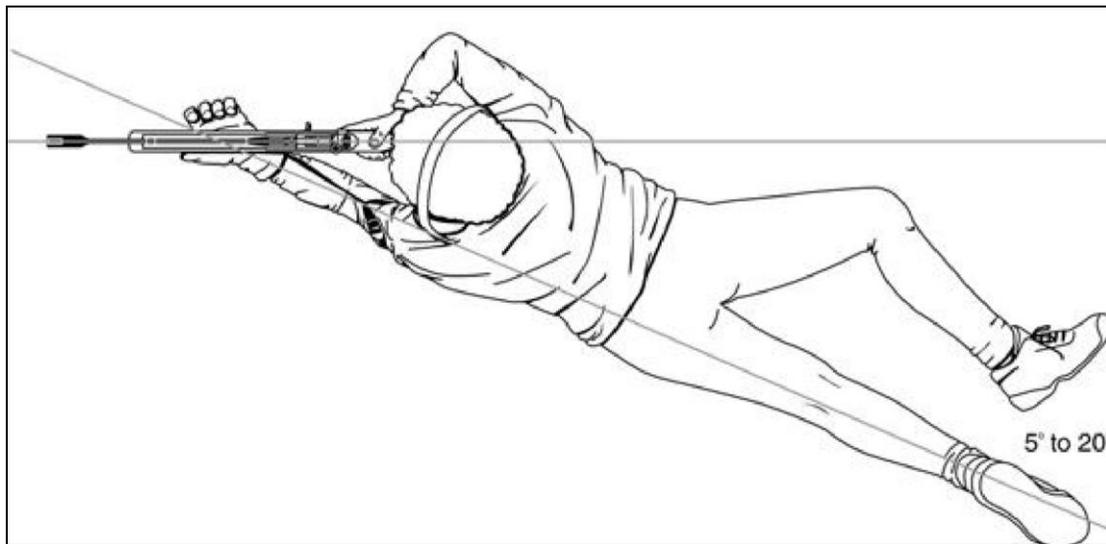


- d. The right (left) foot should turn out and point to the right; the left (right) foot should be straight behind on the toe or pointed to the right (left) according to the comfort of the individual;

- e. The right (left) knee should be brought up so that the thigh forms an angle between 30-45° with the left (right) leg. The right (left) knee should be bent in order to improve stability. This causes the body to roll slightly to the left (right), raising the diaphragm off the ground, thus enhancing breathing. As the chest is also raised off the ground, body movements caused by normal heartbeat are minimized;



- f. The left (right) elbow should be positioned slightly to the left (right) of the rifle. It should not be positioned directly under it or stability will be affected. In order to maintain consistency throughout the relay, the left (right) elbow should not be moved, even while pumping the rifle;



31. POSITIONS (CONT)

- g. The left (right) forearm must form at least an angle of 30° with the ground;

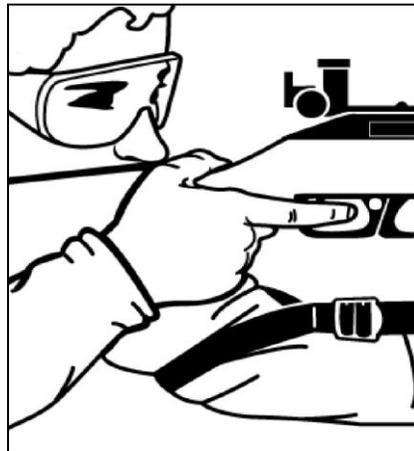


- h. The left (right) hand should rest in the sling and firmly against the sling swivel and the fingers should not grip the fore end of the stock. The hand should be relaxed and the rifle should rest in the palm of the hand;

32. HOLDING

Always keep your finger off the trigger and outside of the trigger guard until ready to fire.

Once a good position is established, the right hand should grip the small of the butt with constant pressure. The force applied by the right hand should never have to support the rifle. If a distinct pressure is necessary in order to keep the rifle in place, some aspect of the position will have to be changed;



- a. The right thumb should be placed on the stock directly behind the rear sight or around the small of the butt;
- b. The position of the right elbow is established after the rest of the body is in place. After placing the right hand on the small of the butt, the right elbow should rest naturally where it falls and feels comfortable. However, the elbow should not be too close or too far from the rifle and it should only bear a small amount of pressure;

32. HOLDING (CONT)

- c. The shoulders should be straight and form right angles with the spine;
- d. The butt plate is kept firmly in the hollow of the right shoulder. In order to ensure that the butt plate is always placed in the same spot, cadets should grasp it with their thumb and forefinger and place it in their shoulder for each and every shot. The right elbow will naturally fall in the same spot throughout the relay;



- e. The head rests comfortably on the butt and remains straight. There should be a minimal distance of approximately five (5) cm between the right eye and the rear sight (known as eye relief). This distance should remain constant throughout the relay. When the face is placed on the butt, the cadet should be looking directly through the sights. If this is not the case, their position should be modified.
33. To ensure positive results, the aforementioned points should be repeated for each shot. The elbows should always be in the same place, the head should exert the same amount of pressure on the rifle, the eye relief should remain constant and the right knee should always be in the same position. If any of these points does not feel right or if cadets find their position uncomfortable, they should readjust it until it is perfect.
34. An excellent way to practice the marksmanship skills required by a cadet is to use a rifle rest such as a sandbag, a scope stand or a pile of books. This allows the cadet to perfect and to understand their marksmanship skills while the rifle is held steady. Once these skills are learned, the rifle rest should be removed and replaced by the sling. Rifle rest will not be use during the shooting competition.



35. ADOPTING THE PRONE POSITION USING RIFLE REST

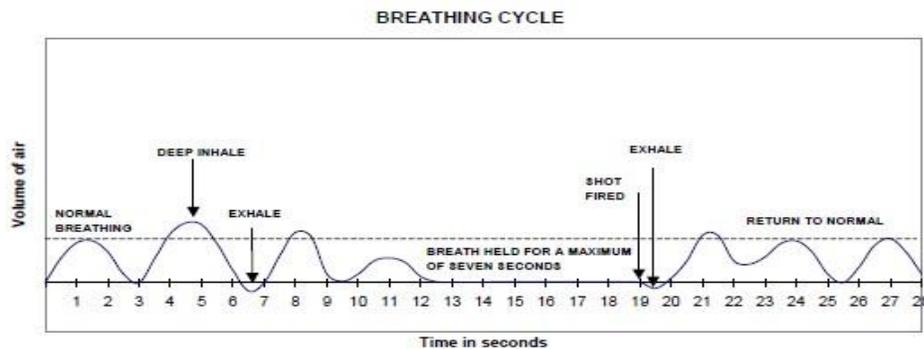
The following steps should be adhered to when adopting the prone position using a rifle rest:

- a. Lay down to the left of their rifle;
- b. Place the left elbow on the ground;
- c. Pick up the rifle;
- d. Lay the rifle on the rest;
- e. Get into a comfortable position while keeping the rifle on the rest;
- f. Place the butt plate into the right shoulder;
- g. Rest their cheek on the butt;
- h. Place the right elbow on the ground;
- i. Adjust the height of the rest; and
- j. Adjust the length of the butt using spacers.

36. BREATHING

Breathing supplies the blood stream with the oxygen necessary for all body functions and to eliminate waste elements (such as carbon dioxide) from the blood. Once a stable position is established, cadets must integrate the principles of breathing. While breathing, the oxygen inhaled is used to supply muscles with energy, ensuring optimal potential of these muscles. This includes the muscles that are involved in the position, as well as the muscles in the eyes.

37. For maximum stability when firing, cadets will have to stop breathing for a few seconds. It is of the utmost importance that they do not hold their breath for more than five (5) to seven (7) seconds, as the tension will increase in their chest muscles and reduce stability. After this period of time, muscles start to lack oxygen and will quiver and eyesight will be negatively affected. This becomes evident if the cadet's perception of the aiming mark goes from black to gray. In order to achieve a proper breathing sequence, the information in the following graph should be adhered to:



38. Breathing should be relaxed and normal as cadets establish a sight picture. Then, they should inhale and exhale deeply, take another deep inhale, exhale normally, and completely release their chest muscles and hold their breath. After the shot, a small exhale is followed by normal breathing, and the cycle is repeated.

39. Cadets should use breathing as a way to confirm that the rifle is moving up and down in a perfect vertical manner and that the rifle is not canted. Also, when breathing in and out, cadets can visually confirm that they are aiming on the proper diagram.
40. Again, it is important for cadets not to fire if they feel they want to breathe again. Their shot will not be perfect and their end result will be affected. They should not be afraid to restart their entire sequence, as this will only improve their level of performance. Relaxed breathing decreases “vibrations” caused by tension.

41. FIRING WITH BOTH EYES OPEN

Cadets should always fire with both eyes open. Eyes are constantly working together. If one is closed, the other will have to strain and the individual’s vision will be affected. If cadets have difficulty focusing, the use of a blinder in front of the non-aiming eye will help prevent squinting and eye fatigue.

42. Cutting a piece of plastic from any type of container can easily make a blinder. A good blinder should be translucent (plastic or paper) so that images are blocked even though light can penetrate it. It should be easily attachable to the rear sight or to the cadet’s glasses.

43. AVOIDING FIXED VISION

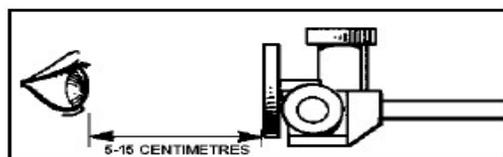
If the marksman’s vision is fixed on one object, such as a target bullseye, for more than a few seconds, the image of the bull will be burned in their mind and a “ghost” image of the bull will be seen when glancing to the side. It is especially important for cadets to avoid this fixed vision, because it results in a loss of visual perception and can greatly hinder their performance. To avoid fixed vision, cadets need only to blink or slightly shift their vision every four (4) or five (5) seconds.

44. PROPER HEAD POSITION

The head should be kept as close as possible to a position which allows the eyes to look straight forward from the eye socket. It is perfectly normal to tilt the head forward slightly, but cadets must resist allowing it to tilt to the left or right as this affects their sense of balance.

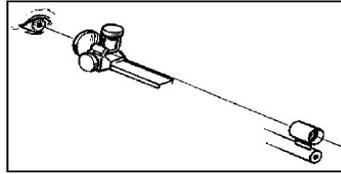
45. PROPER EYE RELIEF

Eye relief is the distance between the eye and the rear sight. Depending on an individual’s build and position, this distance is usually 5 to 15 cm. Cadets should strive to achieve an eye relief that is comfortable, natural, and allows them to see a circle of light around the front sight as they look through the rear sight. It is important for them to maintain the same eye relief from shot to shot and to find an eye relief that allows them to keep their head as erect as possible during the firing process. If they get closer to the sight than 5 cm, the line of white around the front sight becomes larger and more difficult to keep aligned.



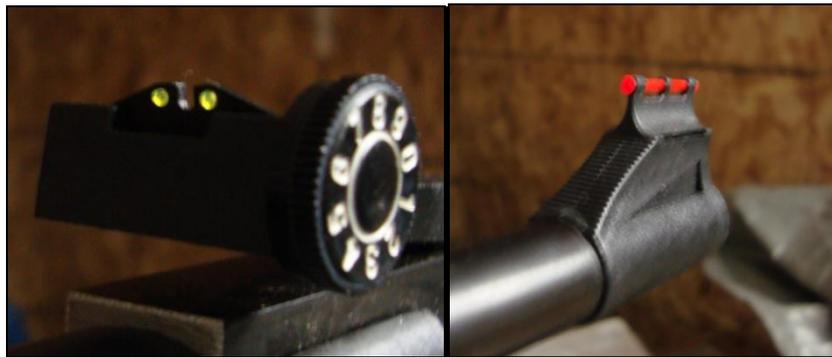
46. SIGHT ALIGNMENT

Sight alignment is the most critical element of the aiming process. It is the alignment of the eye, the rear sight, and the front sight. When cadets bring their eye 5 to 15 cm from the rear sight, they will focus on the rear sight. From the same view point they must be able to line up the front sight in line with their rear sight and have the target in the background behind the front sight.



47. SIGHT PICTURE

The sight picture is achieved when proper alignment allows the cadet to focus on the target. The perfect sight picture will cause the rear sight to look a little blurry on the outside while the front sight and the target are crisp and clearly defined. This state of focus even by some expert marksmen can only reach and held for no more than a few seconds at a time.



(REAR SIGHT)

(FRONT SIGHT)



(SHOOTER'S VIEW ALIGNING BOTH SIGHTS ON TARGET)

48. To a cadet who is concentrating on sight alignment, any movement of the rifle while aiming will make it appear as though the bull is moving around within the front sight area. This apparent movement of the bull should not overly concern the beginning individual. Cadets must constantly strive to maintain proper sight alignment, while obtaining a sight picture. It is the most critical element of the aiming process.

49. NATURAL ALIGNMENT

Natural alignment is obtained when the rifle can be perfectly aimed at the target without being muscled into achieving this. In a comfortable position, the cadet does not force the air rifle to point to the target, which would create muscular tension. Proper alignment will also prevent “drifting” of the group during a course of fire.

50. After establishing a comfortable position, the cadet must now make sure that their body and rifle are directly aligned with the target. In order to understand the notion of natural alignment it is important to remember that the rifle is supported by the bones and not the muscles. In order to ensure that the position is directly in line with the target, cadets should follow these steps:

- a. Assume the prone position, look through the sights and acquire a proper sight picture;
- b. Close their eyes and take several normal breaths and relax into a comfortable position;
- c. Once comfortable, look through the sights again. If they are perfectly centered with the target, proceed with firing;
- d. If they are not directly centered with the target, they must re-orient their position slightly. To do this, they will need to pivot their body on the left elbow. e. Close their eyes and do a final check on their alignment.

51. Cadets must remember to never move their left elbow when they shift their position around. Again, it is essential that cadets use their bones to support the rifle, so that their muscles remain relaxed. Under no circumstances should they use their muscles to change the point of aim by moving the rifle from side to side. If they do a proper follow-through, the rifle will automatically return to the point of aim. It is also important that cadets check their alignment during their course of fire to ensure their position has not shifted.

52. TRIGGER CONTROL

Good trigger control is the second last technical step in carrying out a perfect shot. Consistent squeezing of the trigger assures the desired trajectory upon the departure of the pellet. Trigger control is the manipulation of the trigger in such a way that there is no disturbance or motion of the foresight. It must be constant, controlled, slow and deliberate.

53. CONTROLLING TRIGGER PRESSURE

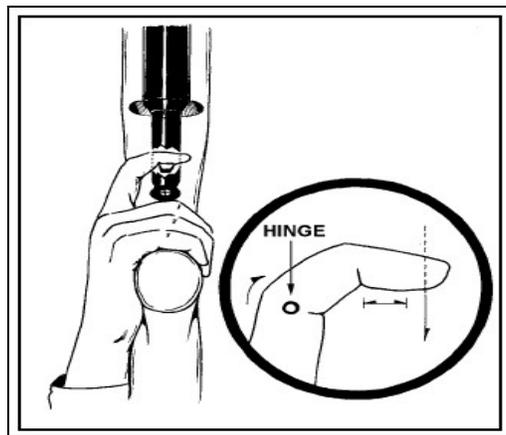
The following criteria should be followed when correctly pulling the trigger:

- a. **Position of the Hand on the Rifle.** Cadets should have a relatively firm grip on the small of the butt with the bottom three (3) fingers of their hand. They should not strain their hand and they should make sure the pressure they apply is consistent for every shot. The thumb should point forward and rest in a relaxed position behind the rear sight along the rifle stock or should be wrapped around the small of the butt.

53. CONTROLLING TRIGGER PRESSURE (Cont'd)

Trigger Finger Position. The index finger should be placed on the trigger halfway between the tip of the finger and the first joint. The index finger never touches the stock of the rifle and must be vertically centered on the trigger.

- c. **Squeezing the Trigger.** Trigger pressure should only be applied when the cadet is ready to fire. It must be applied straight to the rear by bending the second joint of the index finger. Cadets should make sure the pressure they apply is constant and that they slowly squeeze the trigger while they are holding their breath.



54. TRIGGER CONTROL EXERCISES

An effective trigger control exercise is to simulate the movement by using a clothespin. The clothespin should be split in two. It should be placed on the first joint of the trigger finger and the end of the thumb. Cadets should practice squeezing the clothespin slowly using only one muscle: the one in the index finger. They should then analyze the sensations felt in their hand until they can repeat this sequence when actually firing. None of the other fingers of their hand should move when doing this exercise. This exercise is most effective when done with the eyes open followed by doing it with the eyes closed, so that cadets can concentrate and feel the movement of their trigger finger.

55. FOLLOW-THROUGH

Follow-through is essential to firing perfect shots. It is defined as the act of remaining in position for a few seconds after the pellet's departure and it requires both physical and mental effort. It aids in developing proper hold of the rifle, maintaining stability, ensuring that there is no movement of the rifle as the shot is being fired, and calling the shot after it is fired. Follow-through is critical with air rifle marksmanship because the slower shot velocity causes the pellet to remain in the barrel for a fraction of a second longer than small bore or large bore rifles. If the position is stable, the aiming picture should return to the same place it was before the vibrations caused by the release of compressed air. If this sight picture differs from the initial sight picture, some improvements to the cadet's position need to be done.

56. LOADING, FIRING AND UNLOADING

a. Pumping the Air Rifle

- Do not pump the rifle more than once per shot. This air rifle is designed to withstand the pressure based on a single pump stroke;
- If the air rifle is pumped more than once, or left with a full chamber pressure for an extended period (i.e., one hour), the compressed air may not expel completely upon firing. Consequently, the air rifle may have sufficient pressure remaining in the air pressure chamber to fire another pellet. Therefore, a proper unload drill must be done each time a session of firing is completed.

b. Loading the Air Rifle (the rifle should always point towards the targets):

- Pick up and hold the rifle with the left hand;
- Ensure the safety catch is in the ON position; Some models will engage the safety catch automatically upon cocking (Break Open model).
- Pump the rifle. This can be done effectively in three (3) different ways as described in paragraph E;
- When the pump handle is fully extended, pause for about three (3) seconds (this is very important; if done incorrectly, the rifle will have insufficient air pressure);
- Bring the pump lever back to the closed position (watch the fingers!);
- Load a pellet; and
- Close the bolt or close the barrel

c. Firing the Air Rifle (the rifle should always point at the targets):

- When the RSO gives the command, place the safety catch in the OFF position;
- Aim the rifle at the target;
- Squeeze the trigger;
- Open the bolt, pump the rifle, or break the barrel to re-load, aim and fire;
- Repeat the last step until the firing is completed;
- Upon completion of the firing, place the safety catch in the ON position, open the bolt and partially open the pump lever; and
- If you have a break action barrel, upon firing your safety catch may or may not be selectable depending on the rifle model, in this instance, leave the barrel in the partially open position
- Lay the rifle down with the rear sight adjustments facing you

56. LOADING, FIRING AND UNLOADING (cont'd)

d. Unloading the Air Rifle (the rifle should always point at the targets):

- Pump the rifle; Break the barrel and cock the weapon
- If your weapon has a bolt, move the bolt forward (**do not insert a pellet**);
- Place the safety catch in the OFF position;
- Aim the rifle at the target;
- Squeeze the trigger;
- Open the bolt or break the barrel if using a break action air rifle;
- Place the safety catch in the ON position if selectable;
- Open the pump lever slightly;
- Wait to be cleared by the RSO as he/she will check inside the barrel; and
- Lay the rifle down with the rear sight adjustment mechanism facing up.

e. Pumping the Air Rifle from the Prone position:

Option 1. (Pump Action)

- Grasp the pistol grip with the right hand;
- Grasp the pump handle with the left hand;
- Push downward with the left hand until the pump handle is fully extended;
- Wait for a few seconds. Using the left hand, bring the pump handle back to the stock;
- The rifle should remain stationary during the pumping process and always point towards the targets.

Option 1. (Break Open Action)

- Grasp the pistol grip with the right hand;
- With the left hand gently tap the barrel toward the front sight allowing it to break open
- With the left hand pull the barrel downward fully while maintaining the rifle stock pointing in a safe direction;
- Close the barrel fully watching for the pinch point;

Option 2. (Pump Action)

- Remove the butt from the shoulder and rest it on the mat;
- Partially open the pump lever with the right hand;
- Return the right hand to the small of the butt;
- Grasp the pump lever with the left hand, halfway up the lever;
- Lift the rifle upwards until the pump lever is fully extended (keep the left elbow on the mat).
- Pause for three (3) seconds when the pump lever is fully extended.
- Bring the rifle down, thereby returning the pump lever to the closed position.



56. LOADING, FIRING AND UNLOADING (cont'd)

Option 2. (Break Open Action)

- Remove the butt from the shoulder and rest it on the mat;
- Partially open the barrel with the left hand;
- Return the right hand to the small of the butt;
- Grasp the barrel halfway up ensuring the front sight is not hitting the ground; - With your left hand holding the weapon steady, push down on the butt of the weapon until fully cocked. (Keep the left elbow on the mat).
- Bring the rifle down, thereby returning the barrel to the closed position similarly to option 2 with the pump action rifle.

Option 3. Coach assistance.

- Point the rifle in a safe direction and request the assistance from a coach. The coach should move in and pump the rifle using both hands. This should be used as a last resort as any cadet can easily do the above options;

57. MAKING THE WEAPON SAFE

When not being handled on the range or in a training environment, the air rifle must be in a safe status. The following options denote various “safe rifle status”:

Option 1. In the rifle case

- a. Safety catch is ON and trigger lock installed;
- b. Bolt is forward;
- c. Action is not cocked;
- d. Pump lever is partially open (5-8 cm).

Option 2. On the firing line

- a. Safety catch is ON;
- b. Bolt is to the rear; and
- c. Pump lever is partially open or the barrel is partially open

Option 3. Not on the firing line

- a. Safety catch is ON;
- b. Bolt is to the rear;
- c. Pump lever is partially open or the barrel is partially open

58. INDIVIDUAL SAFETY PRECAUTIONS

Upon receiving a rifle or when the “safe rifle status” is uncertain, individual safety precautions must be done to confirm that the rifle is safe.

These precautions are:

- a. The bolt is open fully to the rear;
- b. The safety catch is in the ON position;
- c. The pump lever is partially open; and
- d. Look inside ensuring no pellets are present in the feed track or barrel
- e. Under the control of the RSO, the weapons will be dry fired and safety catch put back on

THIS IS THE ONLY WAY THAT A WEAPON CAN BE CONFIRMED CLEARED AND THAT CYLINDERS/SPRINGS ARE EMPTY/RELEASED

If using a break open action the following steps are to be carried out:

- a. Ensure the safety catch is in the ON position; (some models do not have this option until the action are cocked, do not cock the weapon at this time)
- b. Break open the barrel and look inside ensuring no pellets are present
- c. Ensure the weapon had not been cocked by ensuring there is tension available on the barrel
- d. If the weapon is clear and not cocked it can be considered in a safe status.
- e. Under the control of the RSO, if the weapons are found to be energized, the weapons will be dry fired and safety catch put back on.

THIS IS THE ONLY WAY THAT A WEAPON CAN BE CONFIRMED CLEARED AND THAT CYLINDERS/SPRINGS ARE EMPTY/RELEASED

NOTES

Instructors/coaches must ensure that they complete individual safety precautions on all rifles to be used for instruction or firing on the range, before allowing cadets to handle the rifles as well as before removing rifles from the firing line.

This section of the guide will be used to test the cadet during the practical exam, ensure cadets are familiar with your type of weapons and the different possible scenarios that a range can create.

They will be tested on this!

Part 4 Range Set up and Commands

59. GENERAL

Air rifles may only be fired on a properly prepared air rifle range. The principle dangers found on an air rifle range are:

- a. The ricochet of pellets after they strike a reflecting surface; and
- b. Improper Air Rifles handling.

It is the responsibility of the RSO to ensure that the range is safe and meets all range requirements. It is essential that no part of the pellet stop area may cause a pellet to ricochet.

Each cadet should be provided an area 1.25 metres wide and 2.5 metres (8.2 ft) long when firing in the prone position. See Article 68 for diagram.

60. RANGE EQUIPMENT

The following items are required to set up a portable air rifle range:

- a. Area 15 metres long with controlled access;
- b. Numbered target backstops and firing lanes;
- c. Flags (red and green);
- d. First aid kit and stretcher;
- e. A means of communication for emergencies;
- f. Appropriate mats;
- g. Spotting scopes;
- h. Hearing protectors;
- i. Safety glasses;
- j. Targets;
- k. Pellets; and
- l. Hand washing facility.
- m. Screen or curtain rigged to stop pellets beyond backstops (optional)

61. BACKSTOPS

There are two (2) possible types of backstop:

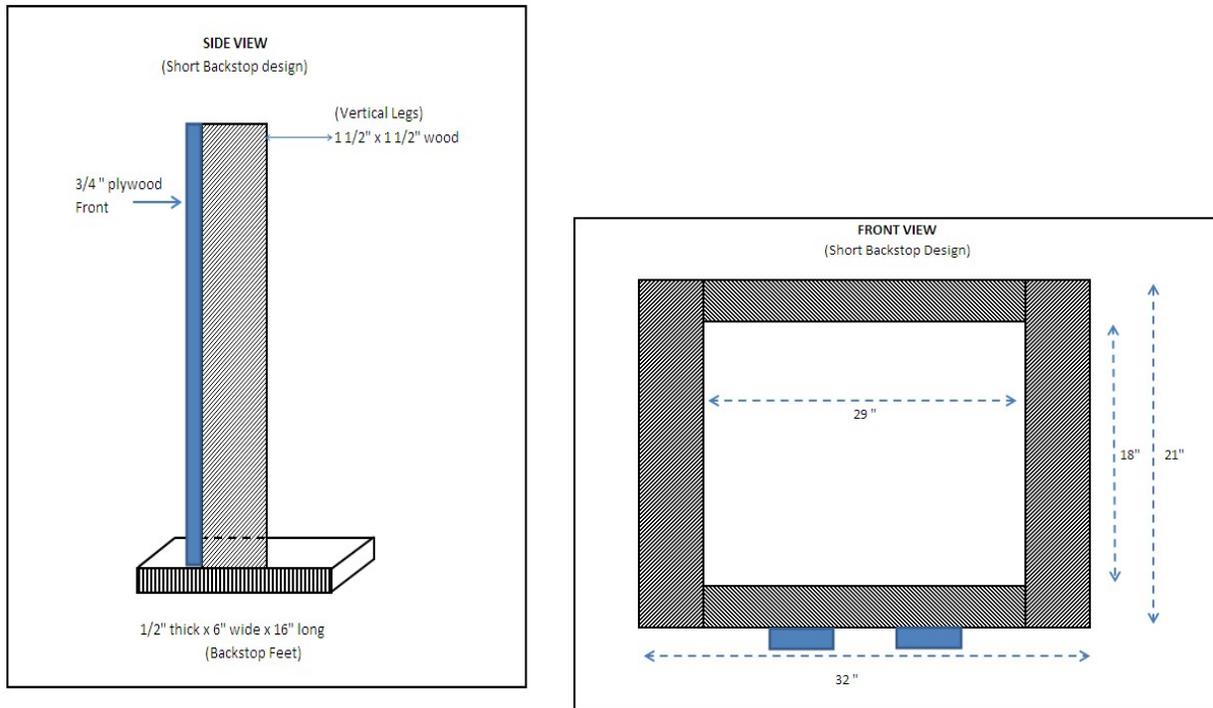
- a. Portable target backstops; and
- b. Permanent range backstops.

Target frames for the prone position may be constructed of either wood frame with steel backer plates or wood frame with a ballistic nylon curtain (Herculite or other brand name) to catch the pellets. The size of the frames shall be large enough to accommodate two 10-meter air rifle targets horizontally or vertically.

61. BACKSTOPS (cont'd)

Construction Plan No.1

Short Backstop Design (Design by Doug Tellier 676 Air cadets)



Note: You also need strong thick carpet that will fit into the inside frame this is so that the pellets will not hit the plywood directly or they will eventually go through the plywood. A front corrugated plastic is cut to cover the front end of the boards this can be bought at Industrial paint and plastic.

The layers should be installed as follow: Target → Plastic → Carpet → Plywood

Construction Plan No.2

Ref: Pacific Region Air Cadet PIP, Aug 2005

- A. **Front Target Board:** The front board is $\frac{3}{4}$ " inch plywood cut 40"x40". A line is measured $3\frac{1}{2}$ " inch in from all sides, and the center of the board is cut out leaving a $3\frac{1}{2}$ " inch wide frame. The inside lip is routered $\frac{1}{4}$ " inch deep and $\frac{1}{2}$ " wide all around;
- B. **Base Boards:** The baseboard is 2"x4" cut 40" inch wide. A $\frac{3}{4}$ " inch routered slot is cut lengthwise $\frac{3}{4}$ " inch deep at the center. The front target board is glued, secured with screws to the baseboard making a solid joint;
- C. **Rear target Boards:** The rear target board is $\frac{1}{2}$ " inch plywood 40" inches wide x 60" inches long;

61. BACKSTOPS (cont'd)

- D. **Piano Hinge**: A heavy duty 2 ½" inch wide (closed), 5" inch (open) piano hinges 40" inches long is mounted to the top rear face of the front target board. No part of the hinge should be visible when viewed from the front;
- E. **Ballistic Nylon Curtain**: The ballistic nylon curtain must be heavy duty, tear resistant, and double weave (Herculite) nylon. The curtain is made 39" inches wide and 60" inches long. Attached to the front of the target board first, it is secured in 5 places along the rear bottom edge. The curtain must be placed to allow 2 to 3 inches to touch the ground while attached to the top and doubled under the hinge so that 10 to 12 inches hang to the front.
- F. **Web strap**: The web straps are first attached vertically to hold the front and rear panels and the second pack of the web attachments are fixed to the inclined rear panel;
- G. **Cardboard**: Cardboard is cut (34 inches x 34 inches) and stapled into the routed lip of the front target board. Targets must be taped not stapled to the cardboard. Targets must never be attached directly to the curtain

62. RSO DUTIES

The RSO must accomplish the following duties:

- a. Prepare the range;
- b. Inspect the range for possible hazards;
- c. Ensure the firing line is ten (10) metres from the targets;
- d. Task and brief range staff; (SEE PARA 63 for staffing requirement and briefing)
- e. Control required flags or control lights, and sentries;
- f. Ensure administration requirements are met (i.e., rations and ammunition); and
- g. Fill logbook and registers as required.

63. RANGE BRIEFING

The range briefing is required to pass on vital information required for the safe execution of a range practice. During the brief, the following information will be covered:

- a. All pertinent sections of the local range standing order; (flags, access points, etc)
- b. A review of the commands that will be use on the range;
- c. A review of the layout of the range;
- d. A safety talk reminders;
- e. A detailed tasking for each of the range staff as well as an execution plan

An example of a range safety brief is listed below:

RANGE DAY

OBJECTIVE: Conduct a shoot of 10 targets in relay to qualify for the marksmanship badge

Range RSO: LT(NL)

Range Assistant:

Local Range Standing Order: (ANNEX F)

The both doors of the building will be locked and the sign: “**DO NOT ENTER – LIVE SHOOTING RANGE IN PROGRESS**” will be installed on both doors.

The red flag will be hoisted on the side mast outside during the shoot and the green flag will be flown when the range is safe.

Access to and front the firing line will be done using the right side of the building.
No cadets will be allowed inside the firing perimeter until directed by the RSO.

Range Commands: As per Article 70. (listed below)

Review the Layout of the Range: As per Article 69. (listed below)

Show firing points, target line, waiting/viewing area. Use diagram or simply point each area.

Safety Talk:

Eye/Ear protection will be worn for the duration of the shoot

Identify safety measures to be followed in the event of an incident (make weapon safe)

Inform the cadets what to do if:

- they experience problems while shooting (weapon safe/arm up);
- they have a misfire;
- upon completion of relay;

Lead Pellets Hygiene (Refer to Article 74)

Tasking and Firing Orders:

Identify the order in which the cadets will be firing in the relays as well as the expectation of the range assistant.

64. RANGE ASSISTANTS

Definition:

A Range Assistant is a NL screened volunteer that can be either a C.I, a current NL officer on staff specifically on site to assist running a range, or a screened parent. (C.I.)

64. RANGE ASSISTANTS Definition (Cont'd)

The Range Assistant is a position that falls directly under the direct supervision of the RSO & CO.

The range assistant position is a great way to involve parents interested in supporting the cadet movement with minimal commitment and helps the corps to be compliant with NL 8 when it comes to cadet activities.

A range assistant is highly recommended as a second set of eyes while balancing the ratio of officers/staffs to cadet ratio. Ideally a 5:1 ratio is recommended (5 cadets to 1 officer/staff ratio).

NL8 Extract Section 3.03:

*“In corps with cadets of both genders enrolled, there must be officers or instructors of both genders enrolled. There must be a minimum of one officer, instructor, or parent, of each gender at **all activities** where male and female cadets are present.*

Minimum Qualification required:

- Navy League Screening process completed
- In receipt of the Navy League ID Card
- NL RSO Course

Optional & Desired Qualification

- First Aid

Generally, the range assistant will provide a second set of eyes on the range and as its name implies assist the RSO with various duties in the assistance of running a smooth range activity. From targets to range set up, scoring, spotting, ammunition distribution, etc.

**Under no circumstances will the Range Assistant run the range.
The RSO remains the person with the appointment and proper qualifications within the NL program and is the only one to conduct a range activity.**

In the case of an accident on the range, the RSO may direct the range assistant to administer first aid to the casualty if qualified in first aid while the RSO supervises the safe unloading of the weapons.

65. RANGE TYPES

The following range types may be used:

- a. Existing indoor ranges;
- b. Existing outdoor ranges; and
- c. Temporary outdoor ranges.
- d. Temporary indoor ranges;

NOTE: When outdoor ranges are used, environmental effects (in particular wind) must be taken into consideration.

66. EXISTING INDOOR RANGES

Please note that indoor ranges that are not certified for support of small bore firearms may still be used with air rifles. Air rifles do not use primers or propellants, which are the main source of lead contamination for indoor ranges. The appropriate range certifying authority should be consulted in advance to prevent misunderstandings.

67. EXISTING OUTDOOR RANGES

When firing air rifles on open outdoor ranges the target area backstop and sidewalls (if required) will be three (3) meters high; and the danger area template will be 250 meters in depth.

68. TEMPORARY OUTDOOR RANGES

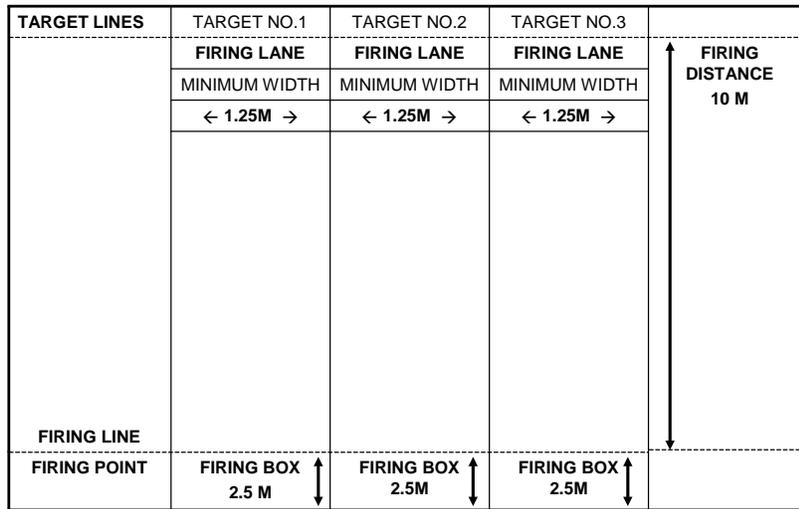
Enclosed temporary outdoor ranges constructed from modular tenting may be used. Open temporary outdoor ranges must have a danger area template of 250 meters in depth.

69. TEMPORARY INDOOR RANGES

Any room or building exceeding 15 meters in length may be adapted to become a temporary air rifle range but to create a safe temporary indoor range; the following steps must be carried out:

- a. Windows must be covered with hard board to prevent damage;
- b. Open vents must be covered to prevent damage;
- c. Any range access or doors must be securely closed or covered to ensure no person may accidentally access the range; and
- d. For each lane, there must be a clear unobstructed line of sight, as well as a clearance of 62.5 cm on all sides, from the firing point to the target.

RANGE LAYOUT



A 10 meter portable Indoor Air Rifle range can be set up in accordance with the diagram above.

Description of an Indoor Range:

- The portable air rifle range is set-up and then dismantled once the activity is completed
- Backstops used will be those described in Article 61.
- Shooting mats/gym mats will be used on the firing line.
- Table and chairs may be set up behind the firing point to be used for ammunition and scoring
- The sides of the range will be indicated and access to those areas should be limited. There is no requirement for physical barriers in those areas.
- The firing distance will be 10 meters. Backstops (Hesin curtain/blankets) will be used to protect the back of the range and minimize damage to walls and doors.

70. RANGE COMMANDS AND PROCEDURES

The following range commands will be given by the RSO and must be learned by cadets before they fire on a range:

COMMAND	ACTION
“Cover off your firing point”	Cadets move behind the firing point and await further commands
“Place your equipment down and stand back”	Lay the equipment down on the mat and stand back when finished
“Adopt the prone position”	Adopt the prone position and put on hearing and eye protection
“Relay load”	Pick up and hold your rifle Ensure the safety catch is in the ON position Cock the rifle Load the pellet Close the rifle
“Relay, Come up on aim”	Aim the rifle at the target
“Relay #_, 10 meters, 5 rounds, Grouping “On Your On Time”	
“Commence Firing”	Safety off Squeeze the trigger Open the breach Repeat the sequence for each shot Place the safety catch in the ON position and open the breach immediately after firing the last shot
“Relay, cease fire ”	Stop firing immediately, put the safety catch in the ON position open the breach and lay the rifle down.
“Give reason for cease fire”	
“Relay, come up on aim”	Aim the rifle at your target
“Commence Firing”	Safety off Squeeze the trigger Open the breach Repeat the sequence for each shot Place the safety catch in the ON position and open the breach immediately after firing the last shot Lay the rifle down
“Relay, prepare for inspection”	Pick up the rifle (leave breach open)
	Place the rifle on the shoulder, muzzle pointed down range
	Wait to be cleared by the RSO, (“Number 1 clear”)
	Repeat the clear by the RSO (“Number 1 clear sir”)
	Lay the rifle down with breach still open
“Relay, stand up.”	Stand up and leave the equipment on the floor
“Change targets”	Walk down and remove targets. Replace with new ones
	Return to firing point
“Relay, change”	Relay leaves the firing line
Repeat from step one with next relay	

71. MAINTENANCE

No one should attempt to clean the air rifle until individual safety precautions have been performed on the rifle, and it is certain that the barrel is clear of any obstructions. It is important to keep the air rifle clean because a dirty bore will eventually cause accuracy problems. Although air rifles do not suffer from powder deposits, they do experience a build-up of residue in the barrel. Rifles should be cleaned before and after firing, periodically and before prolonged storage (3 months and above).

The easiest way to clean the rifles is to fire 2-3 felt cleaning pellets available at most outfitters stores. For prolonged storage, a drop of motor oil should be placed on a pellet and fired as well to lightly coat the inside of the barrel, thus preventing corrosion. The bore must also be cleaned thoroughly after every 1000 shots fired.

The range must also be cleaned after each use and the lead disposed of as hazardous waste. The pellet stop must be inspected regularly to ensure that deterioration has not occurred.

72. AIR RIFLE PELLETS

Air rifles are very sensitive to variations in pellet design and construction. The relationship between the fit of the pellet in the breech and response to peak pressure during firing is critical in obtaining optimal pellet performance. Extensive testing to confirm performance and accuracy was conducted prior to adopting the current air rifle pellet. Additional testing on an as required basis will be conducted to ensure that the pellets in service provide an optimal cost-benefit performance for marksmanship training and competition.

73. PELLET DESIGN AND TYPE

- a. **Diabolo.** The most popular pellet design is the hourglass-shaped air rifle pellet, commonly referred to as the diabolo. The term is derived from the pellet's resemblance to the spool-shaped device used in an ancient Greek throwing game called diabolo. The "waisted" design of the pellet minimizes the friction between the pellet and the rifling. The thin hollow base (or skirt) expands during its travel down the bore to grip the rifling grooves and to establish an effective air seal. The pellet head is slightly smaller in diameter than the skirt and simply rides the rifle barrel lands. In a well-designed diabolo pellet, most of the pellet weight is forward of the skirt in the head of the pellet. This gives the pellet maximum stability in flight – similar in concept to a badminton shuttle.
- b. **Wadcutter.** There are a number of variations on the basic diabolo design. These variations are based upon the intended use of the pellet. For marksmanship and competition training, the wadcutter pellet is used. This flatheaded pellet is designed for cutting neat, clean holes in paper, which allows for accurate, precise scoring of the target. Only diabolo-design wadcutter pellets supplied by the Canadian Forces (CF) are authorized for use in cadet air rifles. Despite its non-aerodynamic appearance, the wadcutter pellet's ballistics are not affected by its flathead design at distances less than 15 metres. In fact, in many instances the wadcutter has better accuracy at short ranges, such as ten metres. Since all cadet training and competitions use a ten-metre range, the flathead pellet design is not a factor in ballistic performance or accuracy.

74. FACTORS AFFECTING BALLISTICS

The most important factor affecting the performance of a pellet is the uniformity of its hollow base. The skirt area has a thin wall that may be easily deformed due to the softness of the pellet head. These deformities affect the pellet's ability to grip the rifle and the balance of air pressure on the pellet. Consequently, optimal muzzle velocity and accuracy will not be achieved.

A simple test to confirm whether or not a pellet is deformed is to roll it on a smooth surface and observe whether or not it rolls smoothly. If the pellet wobbles or jerks, it is out of balance or deformed, and this will decrease its accuracy.

75. LEAD CONTAMINATION: DISPOSAL OF LEAD AND PERSONAL HYGIENE

Although there have only been a few authenticated cases of lead poisoning from rifle firing, all air rifle marksmen should take precautions to reduce any potential for lead contamination. Air Rifles that use cartridges generate most of their contaminants as a result of burning propellants and primers. Obviously this is not a consideration in this discipline. However, each time someone handles pellets, a small trace of lead is left on their hands and can be transferred to other parts of their body or to food. Over a period of time, this contact could increase lead levels in the body. It is therefore recommended that hands be washed thoroughly following all contact with pellets. Spent pellets are regarded as hazardous waste and must be disposed of in accordance with local regulations.

Part 5 Coaching Techniques

76. GENERAL

The role of a coach is to aid, assist, teach and help improve a cadet's performance. A good coach's marksmanship skills can be successfully taught to an individual (i.e., skills, knowledge, enthusiasm, encouragement, positive attitude, and concentration) and will result in an improved marksmanship performance. A good coach is able to recognize and improve imperfections in position, holding and firing.

NOTE

When a verbal explanation or direction is insufficient, it may be necessary to physically adjust a cadet's position or to monitor breathing. Coaches must inform the individual of the actions they are about to take, and request permission to do so.

77. COACHING DUTIES

A coach's duties include:

- a. Providing positive reinforcement;
- b. Instilling self-confidence;
- c. Maintaining a coaching diary;
- d. Correcting marksmanship principles and techniques;
- e. Correcting position problems;
- f. Analyzing targets; and
- g. Dedicating time and energy to cadets.

78. FIRING POINT SEQUENCE

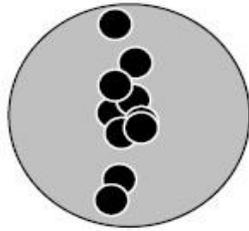
Coaches should take the following actions on the firing point:

- a. Position themselves on the right hand side of the cadet (left side for a left-handed individual) or at the back of the firing lane in the best position to observe without disturbing the individual or their position;
- b. Ensure that the cadet is lined up on the correct target and that the rear sight is correctly set and centered;
- c. Observe the individual's natural alignment. If necessary, adjust their:
 - position;
 - hold (coaches should be particularly aware of possible canting – when the cadet fires the rifle while it is tilted to the side);
 - eye relief;
 - breathing sequence; and
 - trigger squeezing.
- d. Encourage the individual to relax and to rest during his relay.

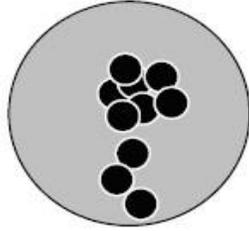
79. ANALYSIS OF COMMON ERRORS

The coach must help the cadet in understanding their errors and teach them how to properly correct them. The following diagrams illustrate eight common errors, and will aid in analyzing specific grouping patterns.

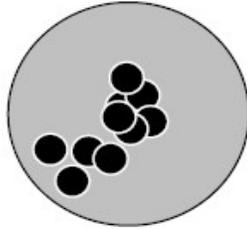
79. ANALYSIS OF COMMON ERRORS (CONT)



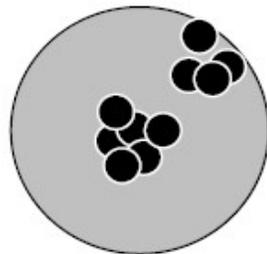
Improper position of the buttplate
Variance in breathing
Variance in eye relief



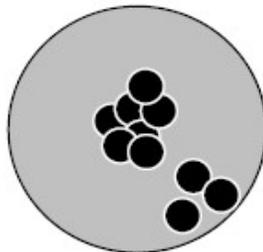
Left hand moving forward



Anticipation of recoil

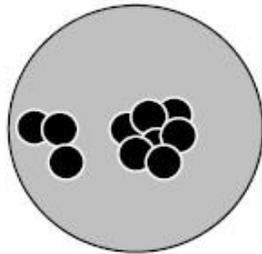


Anticipation of recoil

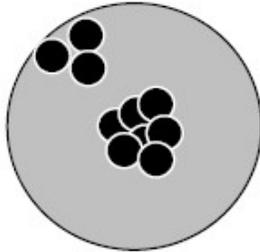


Jerking the trigger

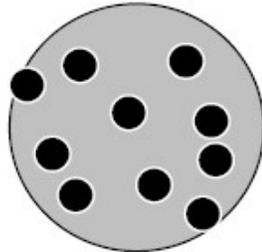
79. ANALYSIS OF COMMON ERRORS (CONT)



Squeezing the trigger at an angle
Improper usage of the sling



No follow-through or anticipation



Poor usage of marksmanship principles or barrel
needs replacing

80. ADJUSTMENTS FOLLOWING A GROUPING

No initial sight adjustment should be made until cadets have fired at least a five (5) shot group. They should also avoid changing their sights after each shot (this is called “chasing the shot”) since centering the group is the main goal in marksmanship. Here are some of the basic rectifications that can be attempted to improve the grouping size:

- if they are aiming too far the right, they move their lower body slightly to the right;
- if they are aiming too low, they move their lower body slightly back (if this does not work, they can tighten their sling); and
- if they are aiming too high, they move their lower body slightly forward (if this does not work, they can loosen their sling);
- Close their eyes and do a final check on their alignment. If they are still not perfectly aligned, they must start over! They must remember to never move their left elbow when they shift their position around.

Again, it is essential that cadets use their bones to support the rifle, so that their muscles remain relaxed. Under no circumstances should they use their muscles to change the point of aim by moving the rifle from side to side. If they do a proper follow-through, the rifle will automatically return to the point of aim.

It is also important that cadets check their alignment during their course of fire to ensure their position has not shifted. Note also that “warmed” muscle groups react differently from “cold” muscle groups.

Part 6 Marksmanship Qualification Badges and Standards

81. MARKSMANSHIP QUALIFICATION BADGE

A cadet who is able to achieve a score of 50 or higher on 10 targets (100 shots / 10 per targets) is allowed to be issued to Marksmanship Badge. The badge is to be worn as per NL 226.

82. MARKSMANSHIP QUALIFICATION STANDARD

The target type to be used to monitor the progress of the cadet in achieving the marksmanship standard must be consistent. An example of a suitable 10 M target with proper scoring capabilities is identified in ANNEX D.

ANNEX A
(FSC Acts & Prove Concepts)

ACTS and PROVE

The essence of safety should be simplicity and consistency. This means doing it right every time. Accidents happen when people become complacent and overlook important steps.

During the redesign of the Canadian Firearms Safety Course program in 1998, several alternatives were proposed for an acronym that could be universally used to safety check a firearm. The letters in ACTS and PROVE stand for:

- A** – Assume every firearm is loaded
- C** – Control the muzzle direction at all times
- T** – Trigger finger must be kept off the trigger and out of the trigger guard
- S** – See that the firearm is unloaded (Prove it safe)

- P** – Point the firearm in a safe direction
- R** – Remove all ammunition sources
- O** – Observe the chamber
- V** – Verify the feed path
- E** – Examine the bore for obstructions

These steps must be followed EVERY time a firearm change hands

ANNEX B
(Practical Test)

CONDUCT AN UNLOADING AND PLACE THE RIFLE IN SAFE STATUS

- a. The breach is open fully to the rear;
- b. The safety catch is in the ON position;
- c. The pump lever is partially open; and
- d. Look inside ensuring no pellets are present in the feed track or barrel
- e. Under the control of the RSO, the weapons will be fired with a cleaning pellet and safety catch put back on. **(Dry fire alone can damage the internal workings of the weapon)**

THIS IS THE ONLY WAY THAT A WEAPON CAN BE CONFIRMED CLEARED AND THAT CYLINDERS/SPRINGS ARE EMPTY/RELEASED

If using a break open action the following steps are to be carried out:

- a. Ensure the safety catch is in the ON position; (some models do not have this option until the actions are cocked; do not cock the weapon at this time)
- b. Break open the barrel and look inside ensuring no pellets are present (a light may be used)
- c. Ensure the weapon had not been cocked by ensuring there is tension available on the barrel
- d. If the weapon is clear and not cocked it can be considered in a safe status.
- e. Under the control of the RSO, if the weapons are found to be energized, the weapons will be dry fired and safety catch put back on.

THIS IS THE ONLY WAY THAT A WEAPON CAN BE CONFIRMED CLEARED AND THAT CYLINDERS/SPRINGS ARE EMPTY/RELEASED

Scenario 1:

Conduct and unloading

Scenario 2:

A cadet is handed a rifle of “unknown” status and must prove it safe.

NOTE: The weapon will be safe to handle, this is intended as a verification of teaching points and MUST be completed successfully prior to be allowed on any range activity.

Individual cadet training profile should be amended and signed by the RSO reflecting a successful completion of the practical handling test.

For the written/oral exam, a score of 40/50 is required to achieve a pass mark.

ANNEX C

Written or Oral Exam (If Oral, must be one-on-one)

CADET NAME: _____

SCORE: _____ / 50 _____ (40/50 to pass)

1. Name 6 COMMANDMENTS OF SHOOTING?

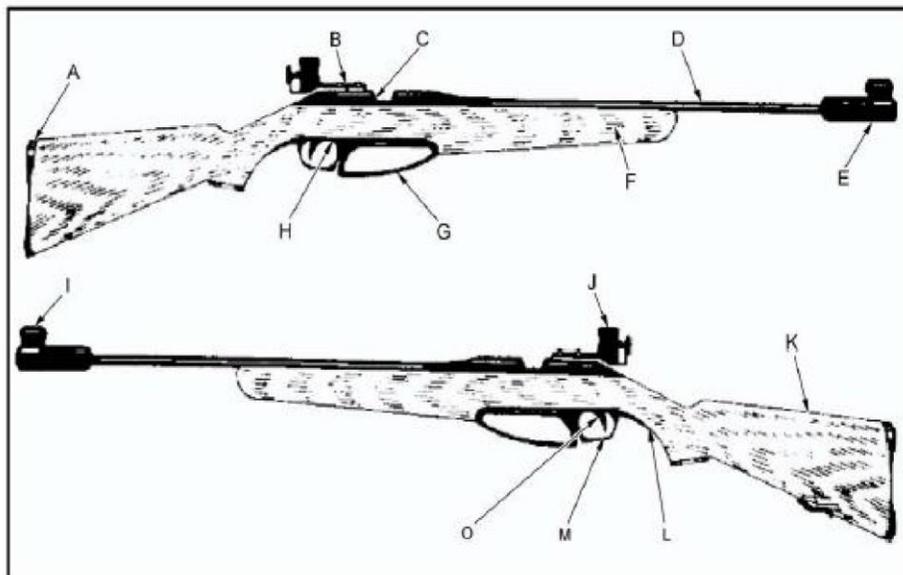
(6 PTS)

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

2.

(14 PTS)

PARTS AND CHARACTERISTICS OF THE CADET AIR RIFLE



Put the letter next to the matching name of the part of the cadet air rifle.

- | | | | |
|----------------------|-------|-------------------|-------|
| 1. Feed Track | _____ | 8. Safety Catch | _____ |
| 2. Small of the Butt | _____ | 9. Muzzle | _____ |
| 3. Barrel | _____ | 10. Pump Lever | _____ |
| 4. Fore End | _____ | 11. Front Sight | _____ |
| 5. Rear Sight | _____ | 12. Trigger Guard | _____ |
| 6. Trigger | _____ | 13. Butt Plate | _____ |
| 7. Bolt | _____ | 14. Stock | _____ |

3. What two things do a good prone position help maintain? (2 PTS)

a. _____

b. _____

4. Sight alignment consists of what three things? (3 PTS)

a. _____

b. _____

c. _____

5. True or False (5 PTS)

a. The Commanding Officer is in charge of the range during a shoot _____

b. Horseplay is not allowed on the range _____

c. Rifles can be pointed at other persons as a joke _____

d. If a rifle is handed to you, you do not need to make it safe _____

e. Cleaning the weapons is the RSO's job _____

6. What are your personal actions if you hear the command cease fire? (15 PTS)

a. _____

b. _____

c. _____

7. What are the 3 Main Assembly groups of a rifle? (5 PTS)

a. _____

b. _____

c. _____

ANNEX D

Answer Key

1. Name 6 COMMANDMENTS OF SHOOTING?

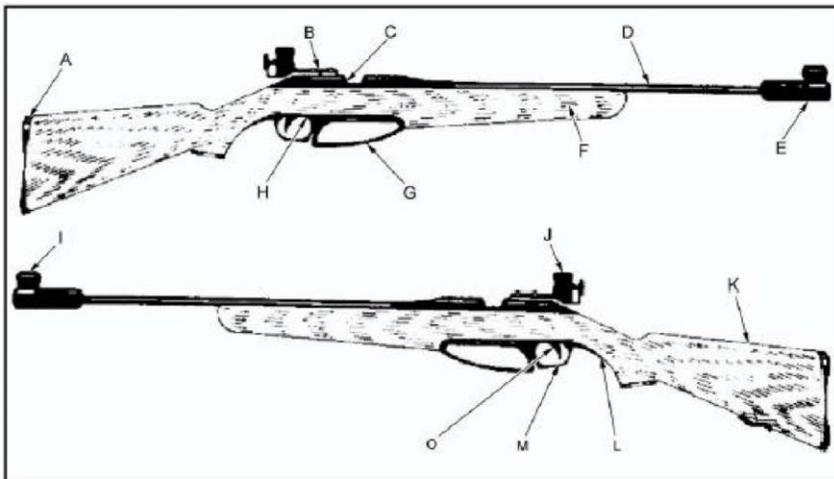
(6 PTS)

1. Listen to the RSO at all times
2. Keep air rifle on safety until ready to shoot
3. Always point the air rifle in a safe direction
4. Never point an air rifle at anything you don't want to shoot
5. Always be absolutely sure of your target and that it has a back stop
6. Always be sure your air rifle barrel is clean and not plugged
7. Never shoot at a flat hard surface or the surface of water
8. Never lean on your air rifle or have any part of your body over the muzzle
9. Never leave your air rifle lying around – put it in a safe locked place
10. Air rifles not being used should always be unloaded
11. Carry your air rifle so you can control the direction of the muzzle
12. Always treat an air rifle as if it were loaded and ready to shoot.
13. Always wear your personal protective equipment on the range

2.

(14 PTS)

PARTS AND CHARACTERISTICS OF THE CADET AIR RIFLE



Put the letter next to the matching name of the part of the cadet air rifle.

- | | | | |
|----------------------|-------|-------------------|-------|
| 1. Feed Track | _____ | 8. Safety Catch | _____ |
| 2. Small of the Butt | _____ | 9. Muzzle | _____ |
| 3. Barrel | _____ | 10. Pump Lever | _____ |
| 4. Fore End | _____ | 11. Front Sight | _____ |
| 5. Rear Sight | _____ | 12. Trigger Guard | _____ |
| 6. Trigger | _____ | 13. Butt Plate | _____ |
| 7. Bolt | _____ | 14. Stock | _____ |

(1C, 2L, 3D, 4F, 5J, 6O, 7B, 8H, 9E, 10G, 11I, 12M, 13A, 14K)

3. What two things do a good prone position help maintain? (2 PTS)

- 1 - Comfort
- 2 - Stability

4. Sight alignment consists of what three things? (3 PTS)

- 1 - The Eye
- 2 - The Rear Sight
- 3 - The Front Sight

5. True or False (5 PTS)

- a. The Commanding Officer is in charge of the range during a shoot? F
- b. Horseplay is not allowed on the range? T
- c. Can rifles be pointed at other persons? F
- d. If a rifle is handed to you, you do not need to make it safe? F
- e. Cleaning the weapons is the RSO's job? F

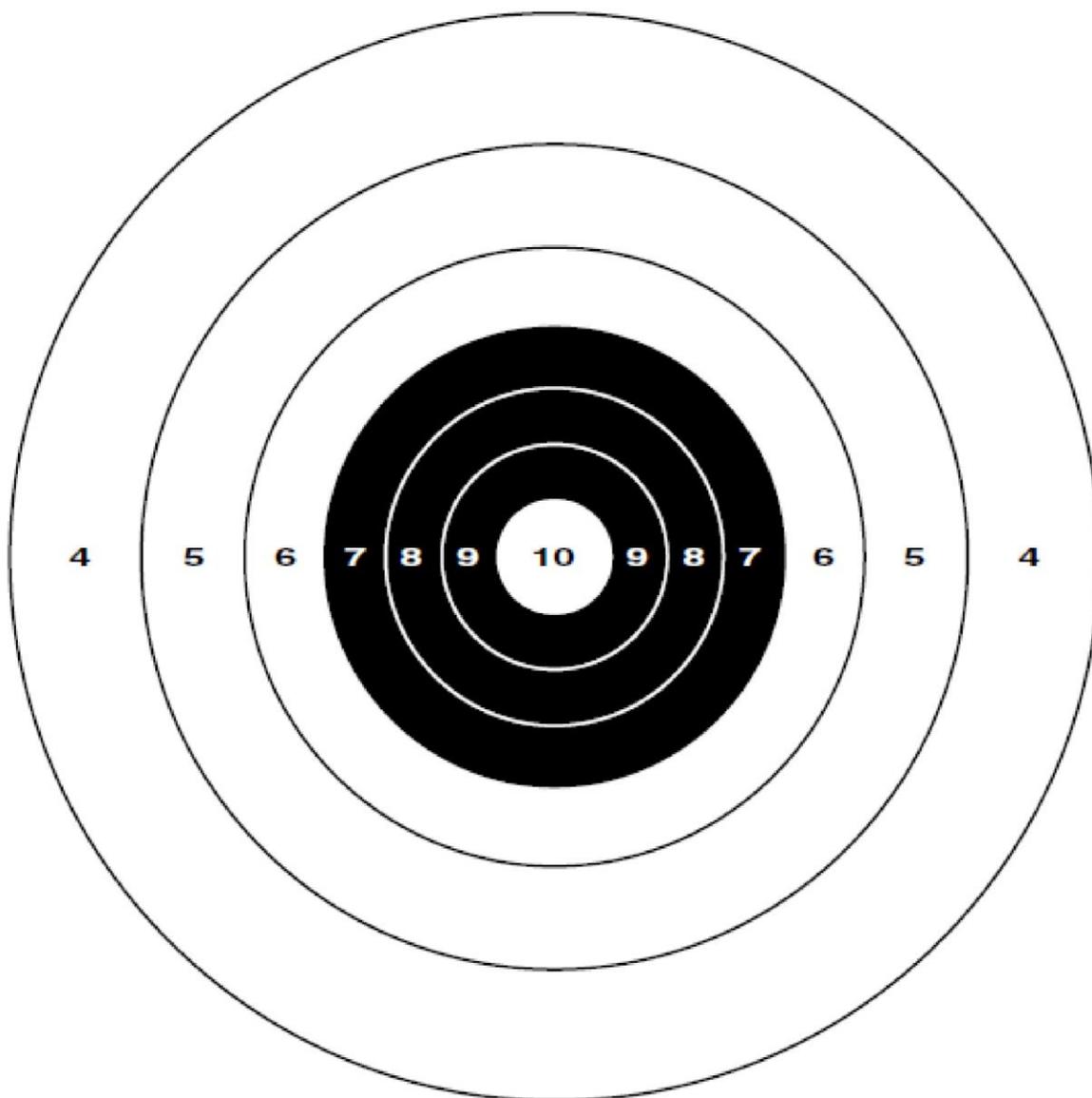
6. What are your personal actions if you hear the command cease fire? (15 PTS)

- a. Stop firing immediately
- b. Place the weapon on safe
- c. Listen to the RSO for further instructions

7. What are the 3 Main Assembly groups of a rifle? (5 PTS)

- a. Action
- b. Stock
- c. Barrel

ANNEX E
Marksmanship Guide



Date: _____
Name: _____

RSO: _____
Score: _____/100

10 Meter Range
(Printable Version)

ANNEX F

Range Safety Standing Orders (Example)

NLCC Range Safety Standing Orders

Important Numbers

Commanding Officer: 1-xxx-555-5555

Executive Officer: 1-xxx-555-5555

Branch President: 1-xxx-555-5555

Emergency: 911

1. Range Standing Orders are to be adhered to during the execution of any air rifle activities involving NLCC XXXXX.
2. The appointed RSO's for NLCC XX are listed below:
 - a. Lt(NL) Smith
 - b. Mid(NL) Jones
3. The Range Assistants for NLCC XX are listed below:
 - a. CI Anderson
4. Emergency Procedures:

In case of an accident involving cadets on the range, the RSO will:

- i. **Call an immediate Cease Fire**
- ii. **Direct the Assistant RSO to provide immediate First Aid to the casualty**
- iii. **Contact Emergency Services if needed**
- iv. **Supervise safe handling and unloading of remainder of the weapons on the range**
- v. **Contact the CO as soon as possible or the XO if CO is unreachable.**
- vi. **Notify the next of kin if the Corps C.O. is not available**
- vii. **Notify the local Police if range is located on civilian property;**
- viii. **Notify the C.O. of the unit responsible for the range if on DND property, as well as the local Police, Military Police or local RCMP Detachment;**
- ix. **Shutdown the range and quarantine the weapon affected.**
- x. **Locate and make ready for use the cadet medical information file folder**

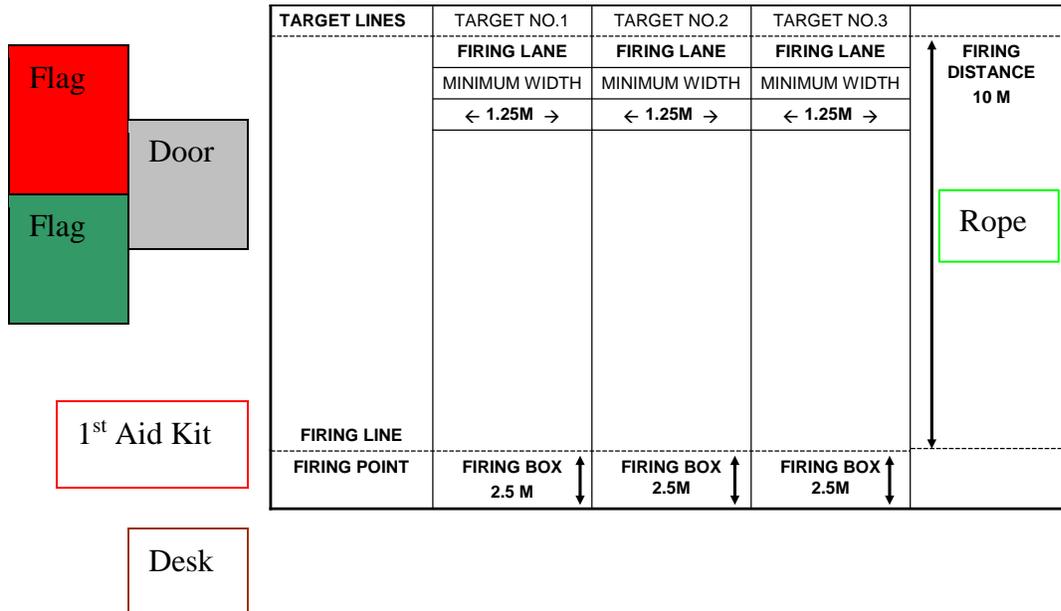
- xi. Take notes on timings, situations and actions completed.
- xii. Submit form WC112 Report of Accident as soon as possible, but within 30 days of the accident.

In case of a fire/earthquake or other incidents while the range is “live”, the RSO will:

- i. Call an immediate Cease Fire
- ii. Direct the Range Assistant to provide immediate First Aid to the casualty(ies)
- iii. Contact Emergency Services if needed
- iv. Supervise safe handling and unloading of remainder of the weapons on the range
- v. Contact the CO as soon as possible or the XO if CO is unreachable.
- vi. When safe to do so, evacuate the building as per the building fire orders and muster in designated area.

- 5. **Qualifications:** Any cadets taking part of a live range event must have completed and successfully passed the NL Air Rifle Familiarization Course - CTS 15. RSO’s are to ensure that the cadets have a parental permission slip on file for the cadet year (locally produced) allowing the cadets to be part of the activities.
- 6. **Range Layout:** The temporary/permanent indoor range will be setup in accordance with the following diagram. (Created to reflect “YOUR” building! - Refer to Articles 60 and 68 in Guide for Equipment & Set up.

RANGE LAYOUT



Access Control Flag, signs and other equipment to be used should be included in “YOUR” diagram.

7. Range Commands: The range commands that will be used on the range are: (Art.69 Guide)

COMMAND	ACTION
“Cover off your firing point”	Cadets move behind the firing point and await further commands
“Place your equipment down and stand back”	Lay the equipment down on the mat and stand back when finished
“Adopt the prone position”	Adopt the prone position and put on hearing and eye protection
“Relay load”	Pick up and hold your rifle Ensure the safety catch is in the ON position Cock the rifle Load the pellet Close the rifle
“Relay, Come up on aim”	Aim the rifle at the target
“Relay #_, 10 meters, 5 rounds, Grouping “On Your On Time”	
“Commence Firing”	Safety off Squeeze the trigger Open the breach Repeat the sequence for each shot Place the safety catch in the ON position and open the breach immediately after firing the last shot
“Relay, cease fire ”	Stop firing immediately, put the safety catch in the ON position open the breach and lay the rifle down.
“Give reason for cease fire”	
“Relay, come up on aim”	Aim the rifle at your target
“Commence Firing”	Safety off Squeeze the trigger Open the breach Repeat the sequence for each shot Place the safety catch in the ON position and open the breach immediately after firing the last shot Lay the rifle down
“Relay, prepare for inspection”	Pick up the rifle (leave breach open)
	Place the rifle on the shoulder, muzzle pointed down range
	Wait to be cleared by the RSO, (“Number 1 clear”)
	Repeat the clear by the RSO (“Number 1 clear sir”)
“Relay, stand up.”	Stand up and leave the equipment on the floor
“Change targets”	Walk down and remove targets. Replace with new ones
	Return to firing point
“Relay, change”	Relay leaves the firing line
Repeat from step one with next relay	

8. **Range Commands:** The range commands that will be used on the range are: (Art.69 Guide)
9. **Safety Talk & PPE:** The personal protection required to be on the range and the method of disposal of the lead pellets in your corps. Hand hygiene after handling of pellets must be reinforced. (Art. 63 & 74 in Guide).
10. **Particular info pertaining to “YOUR” range and setup.** (Example: Weapon Stowage, Ship’s Log entry, Male & Female Cadets / RSO’s). Ref NL 8 m/f officer versus cadets
11. **Maximum number of cadets to be on “YOUR” range.**
12. **A range brief is mandatory before the commencement of the range activity and should review the following points to the cadets.** (Art 56 to 69 in Guide)
13. **The range safety standing orders will be reviewed and updated yearly.**

Range Safety Officer _____

NLCC Commanding Officer _____

NLCC Branch President _____