

# SSAA Adelaide Target Shooters Club Inc



## Firearm and Range Safety and Proficiency Training Manual

This Course Is A Requirement For All New Members  
and  
For Obtaining Licence Category 1 (Shooting Club)



**ADELAIDE TARGET SHOOTERS**

[adelaidetargetshooters.club](http://adelaidetargetshooters.club)

52 Rifle Road, Monarto South SA 5254



Our family and female friendly Club at the Monarto Shooting Complex ranges from 25 to 200m with paper targets provided. Shooters can bring air rifles, rimfires, centrefires, or shotguns for patterning.

If you like to target shoot, plink, need to sight in a firearm or just want to **Try Shooting**, then Adelaide Target Shooters Club is the place for you.

We also conduct regular approved courses for those wanting a Firearms Licence A1 and B1.

No Firearms Licence is required to visit or come and **Try Shooting** at our Club under the direct supervision of our instructors. However you must have photo ID and not be prohibited from using a firearm.

Adelaide Target Shooters Club began back in 1970, when a small group of keen shooters sought to establish a range on the southern side of Adelaide. The original members included such Adelaide notables as Jack Conquest, Jack Mansfield, Syd Miller, Bob Sharrard and Ray Stone. Ray was a keen shooter with a pilot's licence, so he hired a Cessna and flew up and down the South Coast looking for a suitable area.

One was soon located in a stone quarry at Reynella, and the rent was set at one bottle of Scotch whisky for the landowner. Adelaide Target Shooters Club was formed and grew to a membership capped at 20 shooters.

Time marched on and a freeway was built through the area close to the range. It was time to move, and in May of 2004 the Adelaide Target Shooters Club became a SSAA SA branch at the Monarto Shooting Range Complex, south-east of Adelaide. As most of the shooters at Adelaide Target Shooters Club were already SSAA members, it was an easy decision for the Club to make.



## Introduction

This Firearm and Range Safety and Proficiency Course has been designed for everyone who joins SSAA Adelaide Target Shooters Club Inc (Adelaide Target Shooters Club) and for those who require Firearms Licence Category 1 (Shooting Club), which is a legal necessity for all Shooting Club Members.

The information in this Training Manual is supplemented by the [National Firearms Safety Code](#), the [Firearms Act 2015](#) and the [Firearms Regulations 2017](#), the [Criminal Law Consolidation Act 1935](#), the [Adelaide Target Shooters Club Range Rules](#), [Shooting and the SSAA - a beginners guide](#), [Secure your gun Secure your sport](#) and [SSAA Handgun shooting guide](#).

Video presentations are also included; [Firearm Safety No Second Chance](#), [How Bullets Penetrate](#), [Gun Smithing Hazards](#), [Introducing Ballistics](#), [Ballistics](#), [Hunting And Ethics](#). **Warning:** some show brief but graphic content of human injuries and animal cruelty.

All Probationary Members of Adelaide Target Shooters Club must complete this Course regardless of whether or not they have a current Firearms License endorsed with Category 1 (Shooting Club) for the firearms they intend to shoot. However those who already have Licence Category 1 will not be required to re-sit the SAPOL Firearms Examination Paper.

### The Simple Process For Obtaining Licence Category 1 (Shooting Club)

1. Join a Shooting Club (note the licensee must, within 28 days of becoming a member of a Shooting Club, notify the Registrar of that fact and the contact details of the Club).
2. Lodge a [PD307](#) with SAPOL who will send you a letter if training is approved.
3. Provide your 'SAPOL Approval To Undertake Club Training Letter' to the Club Secretary, then successfully complete this approved Club Training Course.
4. An Accredited Firearm Safety Training Instructor will then prepare a PD314 Certificate of Training that the Club Secretary will complete and lodge with SAPOL Firearms Branch.
5. SAPOL will send you a document which you take to a Service SA centre or selected Australia Post office, make payment and have your photo taken.
6. Licence Category 1 (Shooting Club) is then added to your Firearms Licence.
7. Await for your amended Firearms Licence to arrive.

### Course Strategy

This course is designed to be completed in 3 Stages;



#### Stage 1

- Work your way through this Course material in your own time completing the Section Quizzes as you go. Use the various hyperlinks to view the videos, documents and other relevant instructional and resource material.

- Once you have worked through this Course, answer the Section 9 - Course Completion Test. This is an 'open book' test and you can refer back to the relevant sections of this Training Manual or other references if necessary.
- Once completed an Adelaide Target Shooters Club, Accredited Firearm Safety Training Instructor will mark it. You are required to answer 23 out of 26 questions correctly otherwise you will need to re-sit the test.

## Stage 2

Attend Club shooting days as a Probationary Member while completing Stage 1. You will be assigned a Range Officer who will assist you in learning the safety aspects at Adelaide Target Shooters Club and introduce you to the Clubs various shooting ranges and live firing activities.

## Stage 3

Attend a formal training session at the Club where;

- You will receive a revision of this Course content and may ask questions about any matters not completely understood.
- You will be required to demonstrate various safety actions, such as carriage of firearms in Club environs, adopting shooting positions, loading, firing, unloading, clearing firearms, etc. Your live firing aptitude will be tested and assessed.
- There will be an information session covering the importance of public image when involved in shooting sports along with licence requirements, responsible behavior and ethics when hunting.

This session will conclude with trainees sitting the SAPOL Firearms Examination Paper, successful completion of which is the final requirement for your Firearms Licence Category 1 (Shooting Club) endorsement.

The SAPOL Firearms Examination Paper is a closed book test consisting of True or False and Multiple Choice questions about firearm safety and the legal aspects of firearm acquisition and ownership. You must answer 25 of the 30 questions correctly in order to qualify for the Firearms Licence Category 1 (Shooting Club) endorsement.

All of the questions in the SAPOL Firearms Examination Paper will be covered throughout this Training Manual.

## Lock n Load - let's roll ...





## Course Sections

**Section 1** - Page 5 - National Firearms Safety Code

**Section 2** - Page 8 - Firearms Licences, Acquisition, Ammunition, Security, Transportation

**Section 3** - Page 17 - Range Terminology, Requirements, Safety Procedures and Rules

**Section 4** - Page 26 - An Introduction to Firearm Types and Ammunition

**Section 5** - Page 32 - Internal Ballistics

**Section 6** - Page 35 - External Ballistics

**Section 7** - Page 38 - Handgun For Category H

**Section 8** - Page 39 - Hunting

**Section 9** - Page 41 - Course Completion Test

**Section 10** - Page 45 - Oi Oi Oi



## Section 1 - National Firearms Safety Code

- 1. Treat every firearm as if it is loaded.**
2. Your firearm is your responsibility.
3. Always ensure your firing zone is clear and identify your target beyond all doubt.
4. Never point a firearm at or near another person.
5. Never load a firearm until you are ready to shoot.
6. Keep your finger off the trigger until you are ready to shoot.
7. When you have finished shooting remove the magazine (if fitted), unload and then check that the chamber is empty.
8. Make sure that all firearms are transported securely to prevent misuse or theft.
9. Never allow unauthorised access to your firearm(s) or ammunition.
10. Do not climb fences or obstacles with loaded firearms.
11. Encourage safe and responsible handling of firearms in the field, on the range, and within the community.
12. Never mix shooting with alcohol or drugs.
13. Understand the operation of your firearm, keep it in good repair, and always use the correct ammunition.
14. Never store firearms and ammunition together. Ensure they are safely locked away when not in use.
15. Be familiar with the legal requirements for safe storage, firearms ownership, possession and use in your state or territory, or in the state or territory you are visiting.
16. Dispose of unwanted firearms lawfully. Surrender them to the police or sell them to or through a licensed dealer.

**OBSERVE THE CODE: INSIST OTHERS DO THE SAME**



## National Firearms Safety Code

In 2002 the Commonwealth Government published the National Firearms Safety Code. This Code consists of 16 Rules or Principles that form the basis of the safe handling of firearms.

The Test Examination developed by SAPOL Firearms Branch, that you are required to pass as a condition of this Course to obtain Licence Category 1 (Shooting Club), contains a number of questions drawn from the National Firearms Safety Code.

Click [here](#) for your copy of the [National Firearms Safety Code](#). You should now work your way through pages 1 - 15 of this booklet then do the Section 1 Quiz.



## Section 1 Quiz - National Firearms Safety Code

Answer True or False to the following:

1. There is no need to check that a firearm is loaded if an experienced person tells you that he or she has unloaded it. \_\_\_\_
2. When pointing a firearm in a safe direction, that direction will depend on where you are and what you are doing. \_\_\_\_
3. It is important that you yourself observe the firearms safety rules but it is not important that you insist others do the same. \_\_\_\_
4. If someone appears in your safety zone you should stop firing immediately. \_\_\_\_
5. It is alright to point a firearm at someone provided that you know it is unloaded. \_\_\_\_
6. When handling a firearm you should not allow it to point at anyone else or yourself. \_\_\_\_

Answer A, B or C to the following questions:

7. For complete safety with a firearm you should not rely on a safety catch alone because:
  - A. They are unreliable and should not be used at any time.
  - B. Safety catches at best only supplement the safe handling of firearms.
  - C. Various persons have differing opinions on whether to use them.
8. The danger range for a .22 rimfire projectile is:

- A. 1500 metres.
- B. 2000 metres.
- C. 2500 metres.

9. When passing a firearm to another person;

- A. Tell them whether the firearm is loaded or not.
- B. Unload all ammunition from the firearm and pass it over with the breech open.
- C. Open the breech and lay it down safely for the other person to pick up.

10. In addition to ensuring that your firearms and ammunition are stored safely in the home, you should:

- A. Read as much material as you can about firearms.
- B. Consult with others about how they store their firearms.
- C. Tell your family, particularly your children, why firearms should not be touched.

Now check your answers. Any that you get wrong, make sure that you look back through the Section and discover the reference to the correct answer.

These are **False**: 1, 3, 5.

These are **True**: 2, 4, 6.

Multiple Choice: 7B, 8A, 9B, 10C.

## Section 1 - VIDEO - Firearm Safety No Second Chance





## Section 2 - Firearms Licences, Acquisition, Ammunition, Security, Transportation

### Firearms Licences

It is illegal to have possession of a firearm without holding a firearms licence authorising possession of that firearm, unless it is exempted by the Act, Regulations or the Registrar. You must familiarise yourself and comply with all conditions of your licence and those set out in section 18 of the Act and Part 2, Division 2 of the Regulations. If you are in physical possession or control of a firearm, or are supervising the use of a firearm, you must carry your firearms licence or a legible copy (which can include an electronic copy).

### Categories Of Firearms

**A** Air guns; paint-ball firearms; rim fire rifles (not being self-loading); shotguns (not being self-loading or pump action); break action combination shotgun and rim fire rifles.

**B** Muzzle loading firearms (not being handguns); revolving chamber rifles; centre fire rifles (not being self-loading); multiple barrel centre fire rifles (not designed to hold additional rounds in a magazine); break action combination shotguns and centre fire rifles; all other firearms (except prescribed, handguns, self-loading firearms or pump action shotguns) that are not category A firearms.

**C** Self-loading rim fire rifles having a magazine capacity of 10 rounds or less; self-loading or pump action shotguns having a magazine capacity of 5 rounds or less.

**D** Self-loading rim fire rifles having a magazine capacity of more than 10 rounds; self-loading centre fire rifles; self-loading or pump action shotguns having a magazine capacity of more than 5 rounds.

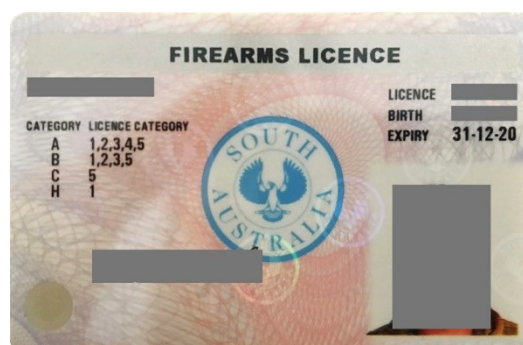
**H** Handguns (not being prescribed firearms).

**P** Prescribed firearms, including automatic firearms, are defined in section 5 of the Act and regulation 7 of the Regulations.

### Categories Of Licence

A firearms licence will be endorsed with the category (or categories) of licence for which a licensee can possess or use a particular category of firearm. These licence categories include:

1. Shooting Club
2. Target Shooting
3. Hunting
4. Paint-ball Shooting
5. Primary Production
6. Security Guard
7. Contract Shooter
8. Commercial Range



9. Shooting Gallery
10. Collector
11. Dealer
12. Miscellaneous

### **Justification For A Licence**

You must be a fit and proper person to hold a licence and have a genuine reason to possess a firearm to which an application relates. You may be required to provide additional information or documentation to support your application.



### **Acquisition Of Firearms**

To legally acquire a firearm, either by purchasing, hiring, borrowing or receiving as a gift, a person must be the holder of a current firearms licence. The licence must be endorsed with the class of firearm that is being acquired and the purpose of use for which the firearm is going to be used.

You must be authorised by a permit to acquire a firearm. You cannot supply a firearm to another person who is not authorised to acquire the firearm by an approved permit.

Unless the acquisition and supply is through an oral loan agreement (for a maximum of 10 days) or written loan agreement (for a maximum of 28 days) between you and another licensee if the terms of agreement are complied with. Refer section 22(5) of the Act and regulation 52 of the Regulations.

That part of the firearm known as the receiver is, for the purposes of the Firearms Act 2015, classed as a firearm.

### **Prescribed Process For Acquisition Of A Firearm**

In order to lawfully acquire a firearm you must submit an application for a permit to acquire it. A **PD306** form (which is available on SAPOL's website) must be completed and approved prior to you taking possession of the firearm. You may submit the form electronically at a licenced firearms dealer or at a police station or by post to The Registrar, Firearms Branch, GPO Box 1539, Adelaide SA 5001. Keep a copy of every document you send to or receive from SAPOL.

If your application is for a firearm, other than a category A, you must set out your genuine need to acquire the firearm which cannot be met by a firearm already in your possession. If you can't demonstrate such genuine need for that firearm, your application will be refused.

If your application is approved by the Registrar, the endorsed **PD306** will be returned to you to enable you to acquire the firearm. The transfer of possession to you must be done through the agency of a licensed dealer, or be witnessed by a prescribed person (member of the Police force or duly authorised officer of a firearms club) who must sight your licence and the approved permit and then complete the 'Witness to Transfer' section of the permit. If for some reason you do not complete the acquisition then sign and return your form to Firearms Branch.

## **Registration Of Firearms**

Any firearm you acquire must be registered. As soon as practicable within 14 days of taking possession, you must attend a police station during daylight hours to apply to register the firearm, and at that time produce to police:

- the approved permit to acquire the firearm, including the completed 'Witness to Transfer' section (unless being undertaken at the same time as registration);
- a valid firearms licence;
- the firearm subject to the application;
- the registration application fee.

The Permit to Acquire a Firearm form will list the requirements for entering a Police station with a firearm. The firearm should have the bolt and magazine removed (where possible), be wrapped securely or bagged, and should have no ammunition in or with it. Generally a Police Officer will remove the firearm from its bag. The firearm should not be unwrapped or removed from its bag by the owner unless directed by a Police Officer.

Following processing, a registration certificate will be forwarded to you.

## **Ammunition**

Ammunition is that suitable for use in a firearm, and includes a cartridge case fitted with a live primer and a projectile, a cartridge case fitted with a live primer and containing a propelling charge and a projectile, and live primers, propellants and blank cartridges. Ammunition does not include inert blank cartridges/drill rounds, snap caps or items designed to fit in the breech or chamber to prevent damage to the firing pin, paint-balls or air pellets.

Ammunition can only be acquired, owned or possessed by you if you hold a firearms licence authorising possession of a firearm of a category designed to fire that ammunition (not including a collectors licence); or an ammunition permit granted under section 32 of the Act.

A person must not have in their possession an amount of ammunition that exceeds the reasonable needs of that person for the immediately following period of 12 months.

## **Firearm Security**

When not in use, your firearm(s) must be unloaded and stored in a safe or strongroom. You must ensure the key, key code or electronic combination, etc. to a safe or strongroom does not come into the possession or knowledge of any other person. Where a firearm of any category (other than a paint-ball firearm or deactivated firearm) is stored in an outbuilding (e.g. a shed) a

minimum Level 2 safe must be used to store the firearm (unless you are entitled to use a Prescribed safe). The level of security required by you is dependent on the categories and total number of firearms being permanently kept at your premises by all licensees. You will need approval of the Registrar (Firearms Branch) to change your manner of firearm security.

### **Firearms And Ammunition Storage Location**

Unless approved otherwise by the Registrar, firearms and ammunition must be stored at your principal place of residence; or if you possess the firearm for the purpose of your business, your principal place of business. Written advice to the Registrar is required prior to a change of location.

### **Ammunition Storage**

Ammunition must be stored separately from firearms in a strongly made timber, metal, fibreglass or injection moulded hard thermoplastic container with a substantial locking and hinge mechanism.



### **Firearm Storage Devices**

Unless entitled to utilise a Prescribed safe, you must only store firearms in one of the following storage devices, depending on the category and number of firearms possessed:

- Level 1 safe minimum of 2 mm thick steel sides and door
- Level 2 safe minimum of 3 mm thick steel sides and door
- Strongroom floor, ceiling and walls constructed of reinforced concrete / besser blocks or double brick to minimum thickness of 140 mm. Door made of steel (10 mm solid sheet structural grade mild steel or 3 mm thick solid sheet cut resistant steel with chemical composition of minimum 12% manganese and encased within, or reinforced by, solid sheet timber of minimum of 40 mm thick)

Safes and strongrooms are required to be built to minimum specifications (e.g. certain locks and hinges required) or in some other manner approved by the Registrar – for further information refer to clauses 2 and 11, Schedule 1 of the Firearms Regulations or the Firearms section on SAPOL's website.

### **Storage And Security Of Firearms (other than paint-ball firearms and deactivated firearms) Aggregate Number Of Firearms**

Minimum security level and requirements 1-19 firearms (category A or B firearms only) Level 1

safe; or Prescribed safe if licence holder on 1 July 2017 (needs written confirmation of Registrar).

- 1-19 firearms (where at least one firearm is a category C, D or H firearm) Level 2 safe; or Level 1 safe (needs written confirmation of Registrar); or Prescribed safe if existing licence holder on 1 July 2017 (needs written confirmation of Registrar).
- 20-34 firearms (firearms of any category, but must be less than 30 category H) Level 2 safe with the premises installed with a working CCTV system or working intruder alarm system.
- 35-49 firearms (firearms of any category, but must be less than 30 category H) Level 2 safe with the premises installed with a working CCTV system and a working intruder alarm system.
- 50+ firearms of any category; or 30+ category H firearms Strongroom with the premises installed with a working CCTV system and a working intruder alarm system.

### **Examples**

1. John Smith has 5 category A firearms. They must be secured in a Level 1 safe unless written confirmation from the Registrar authorises use of a Prescribed safe (licence holder on 1 July 2017).
2. Julie Jones is a new licence holder and obtains a category H firearm to use at a firearms club. The firearm must be secured in a Level 2 safe.
3. Fred Brown has 12 category A firearms and Mary Brown has 10 category B firearms which they secure in the family home. Together they hold 22 firearms and so would require the minimum of a Level 2 safe with either a CCTV system or an intruder alarm system (paint-ball firearms and Registrar approved deactivated firearms are not included in these counts).

### **Storage Of Collector Firearms**

As well as complying with the requirements above, a firearm collector must ensure that each firearm held under the licence that was manufactured after 1900 is kept secured by locking the bolt, breech block or firing pin of the firearm in a container kept securely from the firearm; or by immobilising the trigger of the firearm by trigger lock; or in another manner approved by the Registrar. Collector firearms still require written approval of the Registrar to be fired.

### **Joint Storage Of Firearms And Ammunition**

If you are permanently residing at, or occupying a premises with another licensee, you may secure your firearm(s) in a safe or strongroom where the other licensee is securing their firearms, but you must secure your firearm(s) in a separate locked compartment of the safe or strongroom; or secure them with a separate cable or device which prevents another licensee from unauthorised access.

Ammunition can also be jointly stored in this manner when kept in a separate locked compartment or container within the safe or strongroom preventing unauthorised access.

### **Short-Term, Temporary Storage Of Firearms And Ammunition**

When you are in possession of your firearm(s) and away from the place where your firearm(s) are normally kept (e.g. away from home on a hunting trip) you must secure your firearm(s) or ammunition by using the best means reasonably available to you in the circumstances.

### **Transport Of Firearms And Ammunition**

When you are transporting a firearm(s) or ammunition in a vehicle, vessel or aircraft:

- the firearm must be unloaded;
- all reasonable precautions must be taken to prevent the firearm or ammunition from being lost, stolen or coming into the possession of an unauthorised person;
- the firearm or ammunition must be securely locked in any available boot, glove box, cupboard, compartment or container in which the firearm or ammunition may be locked;
- where more than 1 such compartment or container, etc. is available the firearm(s) and ammunition must be secured separately unless it is not reasonably practicable in the circumstances, or to do so would not be utilising the best security means available;
- if not in a locked compartment, etc. the firearm or ammunition must, so far as reasonably practicable, be covered, concealed or otherwise placed out of sight;
- unless not reasonably practicable or unlawful, firearms or ammunition must not be transported in a container marked such that indicates it contains a firearm or ammunition.
- Your firearm must not be left in an unattended vehicle, vessel or aircraft unless you have a reasonable excuse in the circumstances; and the vehicle, etc. is securely locked; and not left unattended for longer than is reasonably necessary in the circumstances.



### **Notifications To Registrar**

You must notify the Registrar of:

- the loss, theft, destruction or alteration of your firearm(s) within 24 hours of becoming aware (oral report to police) and within 7 days in writing (to the Registrar on a [PD309](#));

- a change in your name or address (written notice to the Registrar within 14 days);
- disposal of your firearm(s) to a person outside South Australia (written notice to the Registrar within 7 days).



### **Criminal Law Consolidation Act 1935**

#### **32AA—Discharge of firearms to injure etc**

- (1) A person who, without lawful excuse, discharges a firearm intending to injure, annoy or frighten any person is guilty of an offence.

Maximum penalty: Imprisonment for 8 years.

- (2) A person who, without lawful excuse, discharges a firearm intending to damage any property is guilty of an offence.

Maximum penalty: Imprisonment for 5 years.

- (3) A person who, without lawful excuse, discharges a firearm and who is reckless as to whether that act injures, annoys or frightens, or may injure, annoy or frighten, any person is guilty of an offence.

Maximum penalty: Imprisonment for 5 years.

- (4) A person who, without lawful excuse, discharges a firearm and who is reckless as to whether that act damages, or may damage, any property is guilty of an offence.

Maximum penalty: Imprisonment for 3 years.

- (5) In proceedings for an offence against this section, it is not necessary for the prosecution to establish that a person was, in fact, injured, annoyed or frightened or that property was, in fact, damaged (as the case requires) by the defendant's act.

- (6) In this section—

**reckless**—a person is reckless as to whether an act injures, annoys or frightens, or may injure, annoy or frighten any person, or damages, or may damage, any property, if the person—

- is aware of a substantial risk that the act could injure, annoy or frighten any person or damage any property; and
- does the act despite the risk and without adequate justification.

## **Section 2 Quiz - Firearms Licences, Acquisition, Ammunition, Security, Transportation**

Answer True or False to the following:

1. There is no need to re register a firearm if the person who previously owned that firearm had registered it. \_\_\_\_

2. It is legal for a person to carry a firearm registered for club use for their own personal protection. \_\_\_\_
3. It is essential that when firearms are carried in public, either on foot or in a vehicle that they are covered from view. \_\_\_\_
4. You will need approval of the Registrar (Firearms Branch) to change your manner of firearm security. \_\_\_\_
5. If a firearm is either lost or stolen or destroyed you must advise the Registrar of Firearms within a month or so. \_\_\_\_
6. It is an offence to discharge a firearm anywhere, including a range, if someone is likely to be injured. \_\_\_\_
7. A and B class firearms can legally be secured in the home by locking them in a Level 1 safe minimum of 2 mm thick steel sides and door which is securely attached to the building in which the firearms are kept. \_\_\_\_

Answer A, B or C to the following questions:

8. The Licence Category which applies to membership of a recognised firearms club is:
  - A. Licence Category 1.
  - B. Licence Category 3.
  - C. Licence Category 13.
9. Under the Firearms Act before you give, lend or otherwise part with possession of a firearm to another person for a period of less than 10 days, you must ensure:
  - A. They are a member of a recognised firearms club.
  - B. They know how the firearm works.
  - C. They hold a firearm licence which authorises possession of that type of firearm.
10. As a club member the process of witnessing the transfer of your club firearms can be undertaken:
  - A. Only by an authorised officer of your club.
  - B. Only by a licensed firearms dealer.
  - C. Either by a member of the police force, a licensed firearms dealer or an authorised officer of a firearms club.
11. Under the Criminal Law Consolidation Act 1935, a person who, without lawful excuse, discharges a firearm and who is reckless as to whether that act injures, annoys or frightens, or may injure, annoy or frighten, any person is guilty of an offence; and could receive a maximum penalty of:
  - A. Imprisonment for 5 months.



- B. Imprisonment for 5 weeks.
- C. Imprisonment for 5 years.

Now check your answers. Any that you get wrong, make sure that you look back through the Section and discover the reference to the correct answer.

These are **False**: 1, 2, 5.

These are **True**: 3, 4, 6, 7.

Multiple Choice: 8A, 9C, 10C, 11C.

[Learn more, read ... Shooting and the SSAA – a beginners guide](#)

[Learn more, read ... Secure your gun Secure your sport](#)

[Learn more, view ... SSAA Travelling with a firearm](#)



*REDUCED. DRAG. FACTOR™*  
**RDF**

## Section 3 - Range Terminology, Requirements, Safety Procedures and Rules

### Introduction

The Firearms Licence Category 1 qualification that you gain as a result of successfully completing this course is recognised by other Shooting Clubs in South Australia. The SSAA SA has issued Standard Basic Range Safety Rules for its affiliated Clubs. Therefore most terminology, rules, conduct and safety procedures are common across SSAA SA Ranges. However you must make yourself fully aware of any specific or unique rules and requirements that are necessary on some Ranges and understand what you must do to comply. This information should be obtained by consulting with a Range Officer immediately upon arrival at any Range.

### Range Terminology

**Range Officer (RO)** The person who is in charge of safety, shooters and all activity on the Range. The Range Officer has the full and final responsibility for the safe and efficient conduct of shooting on the Range. **All Range Officer commands must be followed.**

**Shooter** Any person or competitor who takes part in practice or competition.

**Stop Stop Stop** Emergency command to immediately stop whatever you are doing!

**Firearm** Any firearm of any type, calibre or description.

**Safe condition** Means, unloaded, action open, magazine removed (where possible) and have an orange or yellow empty chamber indicator inserted. Note that on many Ranges the bolt must also be removed (where possible).

**Storage area** A designated area for the storage of firearms whilst not in use.

**Safe area** A designated area for cleaning or maintenance of firearms. No ammunition is permitted to be with a firearm.

**Range open** Firearms may be handled in the manner instructed by the Range Officer.

**Range closed** No handling of firearms unless specifically instructed to do so by a Range Officer.

**Range clear** When the Range Officer is satisfied that all firearms are in a safe condition and all shooters are clear of the firearms the Range Officer will announce; "There will be no handling of firearms during the Cease fire, Range clear (firearms), you may proceed onto the Range." It is safe to go forward to change targets. A similar order "Range clear (of people) you may move forward and remove your firearm from the firing line. Next detail may move forward", may be given by the Range Officer to indicate that the range forward of the firing line is vacant and it is safe to remove

firearms from the firing line and for new shooters to move forward to the firing line.

<b>Preparation time</b>	The time given to the shooter prior to the start of a match to set up equipment.
<b>Load</b>	The command given by the Range Officer to allow firearms on the firing line to be loaded.
<b>Are you ready</b>	A call given by the Range Officer after the Load command. If a shooter is ready they do not reply. If not ready, the shooter must reply, "not ready".
<b>Commence fire</b>	The command given by the Range Officer, after a visual check to ensure the range is clear of people, to allow firing to commence.
<b>Cease fire</b>	A command given by the Range Officer for all shooters to immediately stop firing. The Range Officer will also give appropriate directions for shooters to Unload.
<b>Unload</b>	A command given by the Range Officer for all shooters to unload, open actions, remove magazines (where possible) and insert an orange or yellow empty chamber indicator. Note that on many Ranges (where possible) bolts must also be removed.
<b>Malfunction</b>	Situation whereby a shooter cannot fire a shot due to a firearm malfunction or shooter error. When this occurs the shooter is to maintain control of the firearm, which must be pointed downrange, gain the attention of the Range Officer and await instruction.
<b>Ready position</b>	The position adopted by the shooter after loading, but before the command to commence fire is given.
<b>Cleared firearm</b>	A firearm that has been unloaded, action open, magazine removed (where possible) and have an orange or yellow empty chamber indicator inserted. It must be inspected and declared clear by the Range Officer or nominated person before it is permitted to be taken from the firing line.



### **General Range Requirements**

You may not touch any firearm until the Range Officer issues permission.

No person is permitted to approach the firing line until instructed to do so by the Range Officer. Once on the firing line, firearms must be kept pointing downrange at all times.

Firearms may not be handled behind the firing line unless in a designated safe area.

Under no circumstances may a firearm be loaded except when on the firing line.

No persons but the shooters, coaches and Range Officers are to be on the firing line.

When on the firing line, no firearm is to be loaded until the Load command is given by the Range Officer.

On the command to load, firearms may be loaded and shooters may adopt the ready position, but no firing is to take place.

On the call "Are you ready", any shooter who is not prepared to shoot should clearly signal the Range Officer and indicate that they are not ready.

On the command to fire, shooters may fire and reload at their discretion.

No shooting at any Flora or Fauna.

In the event of a malfunction, the action must remain closed and the shooter must remain in full control of the firearm, keeping it pointed downrange. Attract the attention of the Range Officer and await instruction.

On the command to cease fire, shooters will immediately stop firing and render their firearms in a safe condition.

On completion of shooting, all shooters shall render their firearms safe and await instructions or clearing of firearms by the Range Officer or nominated person.

No firearm is to be removed from the firing line until it has been declared clear by the Range Officer or nominated person.

No person is to move forward of the firing line until the range is declared clear by the Range Officer.

All firearms should be adequately secured while not being used or under the direct control of the owner, Range Officer or delegate. Vehicles containing firearms or ammunition must be locked when unattended.

If you are ever unsure about something at the range then ask the Range Officer.



## **Safety Procedures – Hangfires, Misfires, Squibs, Stuck Rounds, Stuck Cases, Separated Cases.**

### **Hangfire and Misfires**

A misfire occurs when a primer or the propelling charge in a cartridge fails to function wholly or in part. It is also stage 1 of a hangfire, which occurs when the propellant in the round fails to ignite in the expected time once the firing pin has struck the primer. Hangfires and misfires can occur for several reasons; such as a faulty firing pin spring, defective primer or other cartridge related problem.

#### **Should this occur:**

1. Maintain the firing position keeping your firearm pointed down range.
2. Always treat a hangfire or a misfire as if the firearm is going to discharge at any second.
3. Attract the attention of the Range Officer, usually by calling out loudly “Range Officer - hangfire”.
- 4. Maintain your firing position for at least 30 seconds.**
5. Under the control of the Range Officer eject the cartridge then act in accordance with the Range Officers instructions.

### **Squib Load (Pop or No-kick)**

A squib load, also known as a squib round, pop and no kick, or just a squib, occurs when a fired projectile does not have enough force behind it to exit the barrel, and thus becomes stuck. **This type of malfunction can be extremely dangerous**, as failing to notice that the projectile has become stuck in the barrel may result in another round being fired directly into the obstructed barrel, resulting in a catastrophic failure of the firearms structural integrity.

Squib rounds are possible in all firearms. They are most often caused by negligence in the powder loading process (insufficient powder load), or a failure of the primer to ignite the powder at all. While this occurs most often because of hand loading by inexperienced reloaders, squib loads are known to occur even in reputable factory brands, particularly if such ammunition is old and has not been stored correctly.

#### **Should this occur:**

1. Treat all squibs as a probable hangfire.
2. Maintain the firing position keeping your firearm pointed down range.
3. Attract the attention of the Range Officer, usually by calling out loudly “Range Officer – squib – possible hangfire”.
- 4. Maintain your firing position for at least 30 seconds.**

5. Under the control of the Range Officer eject the cartridge/cartridge case then act in accordance with the Range Officers instructions.

**Remember - for any type of hangfire or misfire wait 30 seconds.**

### **Stuck Round**

A stuck round usually occurs when attempting to chamber a round and close the bolt. The bolt will not close as the round is not fully seated in the chamber. Attempts to eject the round fail.

#### **Should this occur:**

1. Keep your firearm pointed down range.
2. Attract the attention of the Range Officer - usually by shouting "Range Officer - stuck round"
3. Under the control of the Range Officer, make the firearm safe (if possible by removing the bolt) then take the firearm to a qualified person for attention.

**No attempt is to be made to remove a stuck live round on any SSAA range. The firearm is to be made safe and removed from the firing line and the range. It should be taken to a qualified person for the removal of the round.**

### **Stuck Case and Separated Case**

A stuck case or separated case occurs when the cartridge case either becomes stuck or the case head separates when attempting to eject the case after firing.

#### **Should this occur:**

1. Keep the firearm pointed down range.
2. Attract the attention of the Range Officer. Usually by shouting "Range Officer - separated case".
3. Under the control of the Range Officer, make the firearm safe (if possible by removing the bolt) then remove the firearm from the range.



## Adelaide Target Shooters Club Specific Range Requirements and Safety Procedures

The onus of carrying out the Range Rules of the Club shall rest on each individual Shooter, Competitor, Range Officer and Observer.

Immediately upon arrival at Adelaide Target Shooters Club Range all persons must;

- sign the relevant register book,
- report to the Range Officer or Club Official, and
- if a visitor, receive a safety briefing.

**During all Cease fires and when the Range is Closed no one is permitted to handle any firearm and all persons must step back and remain behind the red line.**

No firearm is to be taken to the firing line without the approval or instruction of the Range Officer.

No firearm is to be removed from the firing line until it has been declared clear by the Range Officer or nominated person.

Any firearm malfunction must be reported to the Range Officer immediately, the action must remain closed and the shooter must remain in full control of the firearm, keeping it pointed downrange.

In the event of a Danger signal (a call of "Stop Stop Stop") the Range Officer will then call "Cease fire". Shooters must immediately unload and make safe.



# SSAA Adelaide Target Shooters Club Inc - Range Rules

**Safety is the responsibility of everyone on the range.**

**Breaches of these rules may incur removal from the range, counselling and/or other disciplinary action.**

1. A Range Officer must be present at all times when there are two or more shooters using the range and must be easily identifiable by the wearing of a SSAA Range Officer Vest. All persons on or near the firing line must pay attention to and obey all orders given by the Range Officer.
2. No shooting is permitted unless all red flags are flying as required.
3. No handling of any firearm is permitted on the firing line while there are people down range.
4. When moving around the range all firearms must be pointed in an upright position, unloaded, action open, magazine removed where possible and have an orange or yellow empty chamber indicator inserted.
5. All firearms must be checked and cleared by a Range Officer or nominated person other than the shooter before they are permitted to be taken from the firing line.
6. All firearms should be secured adequately while not being used or under the direct control of the owner, Range Officer or delegate.
7. When moving to or from the car park to the firing line area all firearms must either be bagged or cased, or must be pointed in an upright position, unloaded, action open, magazine removed where possible and have an orange or yellow empty chamber indicator inserted.
8. All targets must be placed so that projectiles will impact directly into the mound. Only approved targets may be used.
9. No attempt is to be made to remove a stuck live round on any SSAA range. The firearm is to be made safe and removed from the firing line and the range. It should be taken to a qualified person for the removal of the round.
10. Ear and eye protection is recommended to be worn at all times when on or near the firing line. Failure to do so may affect any claim made in regard to an incident where injury might have occurred.
11. In the interest of safety and good public relations, camouflage clothing, thongs and sandals are banned on the firing line.
12. Absolutely no alcohol is permitted within the firing line area. No consumption is to be permitted for any person who is intending to shoot later on the same day. No person who is adversely affected by alcohol or a drug is to be permitted to handle firearms or to shoot.





## Section 3 Quiz - Range Terminology, Requirements, Safety Procedures and Rules

Answer A, B or C to the following:

1. The person in charge of the safety of the range who issues all commands to the shooters is known as:
  - A. The Range Officer.
  - B. The Club Captain.
  - C. The Range Superintendent.
2. Alcohol is permitted within the firing line area:
  - A. At the conclusion of shooting for the day.
  - B. When there are no firearms on the range.
  - C. Alcohol is never permitted within the firing area.
3. Firearm maintenance can be carried out:
  - A. Once a firearm has been cleared and declared safe by the Range Officer.
  - B. In the barbeque area.
  - C. Only in a designated Safe area.
4. A Danger signal can be:
  - A. The Range Officer or anyone calling "Stop, Stop, Stop".
  - B. Consistently missing your target.
  - C. All of the above.
5. If you experience a hangfire, misfire or squib you must immediately notify the Range Officer and wait with your firearm pointed down range:
  - A. 30 seconds.
  - B. At least one minute.
  - C. Two minutes.

Answer True or False to the following:

6. On the command 'Load', firearms may be loaded and shooters adopt the ready position. \_\_\_\_
7. On the command 'Unload' from the Range Officer all shooters must unload, open actions, remove magazines (where possible) and insert an orange or yellow empty chamber indicator. \_\_\_\_
8. Safety is the responsibility of everyone on the range. \_\_\_\_

9. It is not necessary to lock vehicles containing guns or ammunition provided that they are parked in the designated range parking area. \_\_\_\_
10. No attempt is to be made to remove a stuck live round on a SSAA range. \_\_\_\_
11. Provided it is on the range, you can shoot at any target including rocks or any other hard surface. \_\_\_\_
12. Visitors must, on arrival, report to the Range Officer or Club executive to receive a safety briefing. \_\_\_\_
13. Always initially treat a misfire as a probable hangfire. \_\_\_\_
14. On arrival at the range, no firearm is to be taken to the firing line unless instructed to do so by the Range Officer. \_\_\_\_

Now check your answers. Any that you get wrong, make sure that you look back through the Section and discover the reference to the correct answer.

Multiple Choice: 1A, 2C, 3C, 4A, 5A.

These are **False**: 9, 11.

These are **True**: 6, 7, 8, 10, 12, 13, 14.



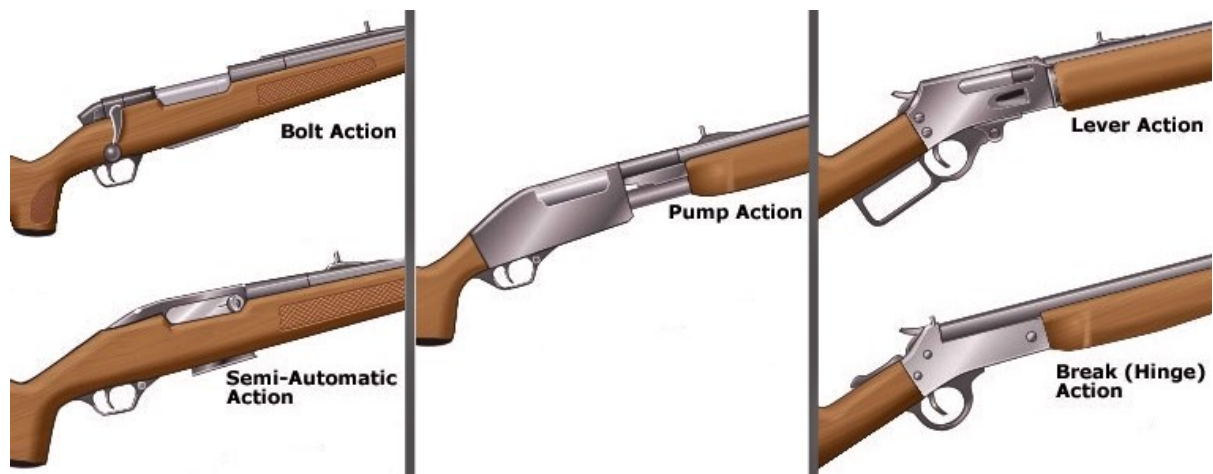
## Section 4 - Firearms and Ammunition

### Introduction

In order to be a safe and effective member of Adelaide Target Shooters Club a basic knowledge of firearms and ammunition is necessary. Our range is certified for smallbore and bigbore rifles and handguns.

You should now study pages 17 to 29 of the [National Firearms Safety Code](#) booklet to gain a general understanding of how different firearms work.

### Types Of Firearms



If you are still unsure how some of these firearm actions actually work, video examples can be viewed by clicking on these links:

[Bolt Action](#)

[Lever Action](#)

[Semi-Automatic](#)

Now read the information on Magazines, Ammunition Identification And Safety, Bullet Penetration and Firearm Maintenance. Then complete the Section Quiz.

### Magazines

**Fixed box magazines.** These are a spring loaded box built into a recess in the stock, underneath the bolt of the firearm. A variety of configurations exist, including single stack, double stack and rotary, but the operating principles for all of them are the same.

The magazine is generally loaded by keeping the bolt open and placing the rounds singly down into the magazine until they click into place. As the bolt is closed it will strip the top round from the magazine and chamber it.



To unload, a hinged floor plate is often fitted underneath the receiver, which when opened, will allow the rounds to drop out of the firearm. It is essential to ensure that any chambered rounds are removed also by opening the bolt and checking the chamber.



**Detachable Box Magazines.** Detachable box magazines are a spring loaded box, separate from the structure of the firearm that is inserted into the firearm underneath the bolt.



The magazine is generally loaded by placing the rounds singly down into the magazine until they click into place. The firearm can then be loaded by inserting the loaded magazine into it until a spring loaded clip retains it. As the bolt is closed it will strip the top round from the magazine and chamber it.

To unload, the spring loaded retaining clip is depressed which will allow the magazine to drop out of the firearm. It is essential to ensure that any chambered rounds are removed also by opening the bolt and checking the chamber.

**Tube Magazines.** Tube magazines are a non-detachable magazine, consisting of a spring loaded tube located underneath the barrel of the firearm. For class A and B firearms a tube magazine will mainly be encountered on pump and lever action rifles. There are two basic variations to the design.

- **A single tube** that contains the spring and cartridge follower. It is loaded by inserting rounds through a loading port on the side of the receiver. The only method of unloading this type of magazine is to cycle the action until all rounds have been ejected. Ensure that the muzzle is pointed in a safe direction and the finger is kept away from the trigger during this process.
- **Two tubes, an outer and inner.** The outer contains a loading port usually about half way along its length, and the inner tube contains the magazine spring and follower. This magazine is loaded by sliding the inner tube out of the outer tube until the loading port is clear, at which point rounds may be loaded into the magazine. Whilst keeping the muzzle pointed safely, it is useful to tilt the rifle upward in order for the rounds to slide back to fill the magazine. When the magazine is filled up to the loading port, the inner tube is inserted back into the outer tube, and locked into place. To unload, the inner tube is completely removed from the outer tube, and the muzzle pointed downward, allowing the rounds to fall out of the firearm. The inner tube must then be reinserted and the action cycled a number of times with the muzzle pointed safely to ensure that there are no rounds left in the action or magazine.

When using centrefire rifles fitted with tube magazines, it is advisable to use round nosed ammunition. Pointed projectiles loaded into a tube magazine could hit the primer of the round in front during recoil, possibly setting off a chain reaction of detonations that will likely destroy the firearm and injure the shooter. Some manufacturers now produce pointed ammunition with plastic tips suitable for use in tube magazine firearms.

### Ammunition Identification And Safety

It is imperative that only ammunition designed for use in a particular firearm is used in it. Using ammunition that was not designed for a particular firearm is likely to ruin the firearm, and even injure or kill the shooter.

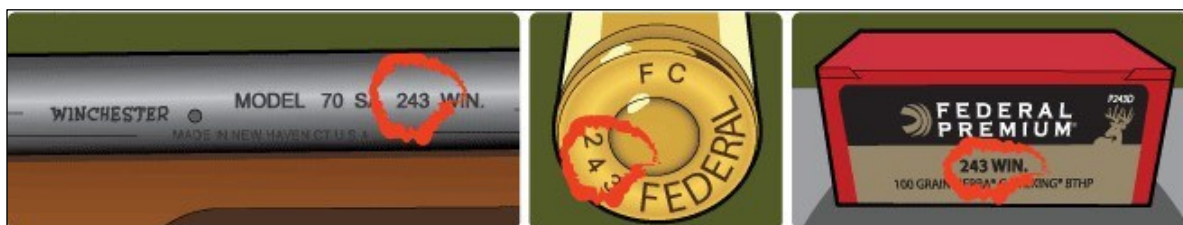
You should be able to see stamped on the firearm (usually on the barrel) the cartridge for which it is chambered. If no markings can be identified, a competent gunsmith can make a chamber cast and tell you what cartridge the firearm is chambered for.



Some cartridges will chamber and fire in guns that are not chambered for that cartridge. For example, a .308 Winchester cartridge will chamber and fire in a firearm chambered for the 25-06 Remington, but the projectile will not fit down the barrel. This is very dangerous.

When the projectile is larger than the barrel, the gases generated have nowhere to go but to act on the firearm itself, usually resulting in its destruction. A similar situation can occur if chambering 3 inch shot shells in a gun chambered for 2½ inch shells. The shell will fit and will look fine externally, however when fired the shell cannot open sufficiently to prevent massive overpressure.

Only use ammunition that is stored in its original, labelled packet, or has a clear head stamp or other markings that clearly identify what the cartridge is. Keep ammunition stored in original or clearly labelled boxes.



If hand loading, label reloads with the details of the load. Include the date loaded, the type and volume of powder, the weight of the projectile or shot and the calibre or gauge. This is especially important if you have more than one firearm in a given calibre.

In general modern sporting arms will handle much stronger loads than century old firearms,

and so it is important to label your loads to prevent the use of stout, modern loads in older, weaker firearms.



## Bullet Penetration

It does little to quote bullet penetration data other than to make shooters further aware that there may well be people behind a target that cannot be seen because of obscuring trees, walls etc and that while these trees etc may be an obstacle to sight, they are not an obstacle to a 150 grain 30-06 bullet travelling at 2500 feet per second.

Consider too that a 5.56 mm NATO round is designed to penetrate 3 mm of steel at 600 metres when fired from an M16. However that is a specially designed and tip hardened military round. Its civilian equivalent calibre the .223 Remington would not penetrate to this standard.

But how much steel or wood a round might penetrate is academic when considering living tissue. A bullet that might simply flatten against a wooden log can easily kill a human being.

Bullets kill or maim in various ways, such as bleeding because of tissue or artery damage, organ destruction or hydrostatic shock. The seriousness and extent to which a body might be damaged depends on a range of factors, such as bullet residual velocity, shape, weight and construction. Also exactly where on the body the impact occurs and what organs are damaged.

What you must remember is that any bullet striking any person on any part of their body has the potential to kill. This is why firearm safety is at the core of all of our activities at Adelaide Target Shooters Club.

## Section 4 - VIDEO - How Bullets Penetrate

**Warning:** features brief but graphic content of human injuries.

## Firearm Maintenance

Whenever cleaning a firearm remember the first rule of safety - **Treat every firearm as if it is loaded** till you personally prove otherwise. Make sure that your firearm is unloaded before you do anything else.

There are two by-products of shooting that necessitate the regular cleaning of your gun:

- powder residue which if left in barrels can absorb moisture and start corrosion/rust; and
- in modern centre fire rifles using smokeless propellant, most projectiles have a copper

jacket to stop the build up of lead in the barrel. Unfortunately in its place a build up of copper is possible and once this occurs, accuracy can suffer.

There are solvents available to solve both these problems.

Experienced Club Members are able to advise you what you should consider obtaining. Bore Snakes are handy and field efficient. The following is a general list of appropriate equipment:

- a good quality cleaning rod for your calibre,
- brass cleaning tips and bronze and nylon brushes for the rod,
- bore solvent and gun oil,
- firearm cleaning cloth or patches, and
- a bore guide to fit your rifle to guide brushes etc into the chamber and prevent solvent spillage into the trigger mechanism when cleaning.

Click here to view the [SSAA Cleaning your firearm](#) video.

One caution, a number of bore copper solvents react with brass so always use a nylon as opposed to a brass bristle brush when applying this solvent to your bore.

## Section 4 - VIDEO - Gun Smithing Hazards

### Section 4 Quiz – Firearms and Ammunition

Answer True or False or select either A, B, C, D or E from the multiple choice questions.

1. The commonly used expressions to identify the basic parts of a firearm are:
  - A. The Lock, Stock and Bolt.
  - B. The Lock, Stock and Barrel.
  - C. The Barrel, Bolt and Magazine.
  - D. The Lock, Bolt and Stock.
2. The seven basic functions of a firearm are listed below. Indicate the order in which they occur in a bolt action firearm, by putting a number in the right hand column:

Feeds	1
Locks	
Cocks	
Fires	
Ejects	
Unlocks	
Extracts	

3. Never rely solely on a safety catch. \_\_\_\_
4. Ensuring that your firing zone is clear and positively identifying your target, amongst other things requires that you:

- A. Do not fire at movement only or colour only.
  - B. Do not fire at shine only.
  - C. Do not fire at sound only or shape only.
  - D. A and C above.
  - E. All of the above.
5. When handling or before storing a rifle with tubular magazines, be particularly careful that:
- A. The magazine is free of ammunition.
  - B. The magazine can be easily dismantled.
  - C. The magazine is for the calibre of ammunition you are using.
6. In a loaded semi-automatic firearm when the action is fired the gun will Fire, Unlock, Extract, Eject, Cock, Feed and Lock. \_\_\_\_
7. The calibre of a rifle is usually stamped into the barrel. \_\_\_\_
8. A cartridge can usually be identified by the calibre stamped into the base. \_\_\_\_
9. The primer in a .22 cartridge extends around the full diameter of the cartridge base, whereas in a centrefire cartridge the primer is pressed into the centre of the round. \_\_\_\_

Now check your answers. Any that you get wrong, make sure that you look back through the Section and discover the reference to the correct answer.

These are True: 3, 6, 7, 8, 9.

Multiple Choice: 1B, 4E, 5A.

2. Bolt action firearm basic function sequence is: Feeds 1, Locks 2, Fires 3, Unlocks 4, Extracts 5, Ejects 6, Cocks 7. See page 20 [National Firearms Safety Code](#) booklet.





## Section 5 - Internal Ballistics

### Introduction

With the exception of air arms and muzzleloaders, most modern firearms are cartridge loading. Except for air arms, all firearm ammunition basically consists of similar components: an ignition source, a propellant, a projectile and a container (cartridge case) to hold these components together.

Generally the primer is struck by the firing pin, which ignites the main powder charge. The main charge burning creates a large amount of gas (i.e. 40 grains of powder burning could create as much as 40 litres of petrol) which, in the small confines of the case and chamber, creates enormous pressure behind the projectile, and causes the projectile to leave the case and travel down the barrel.

### Section 5 - VIDEO - Introducing Ballistics

#### Firearm Barrels

Firearm barrels can be split into two distinct types, rifled and smoothbore. Almost all modern rifles and pistols have rifled barrels.



#### Rifled Barrels

Rifling in the barrel imparts a spin to the bullet which stabilizes it in flight thus increasing both range and accuracy.

If the rifling in the barrel does not impart sufficient spin to the bullet, it will become unstable and tumble in flight, resulting in increased drag and significantly decreased accuracy and range.

Projectile spin rate is a function of speed of the bullet down the barrel and twist rate. Lighter bullets travel faster down the barrel than heavier ones with the same powder charge, hence leaving the barrel with a higher spin rate.

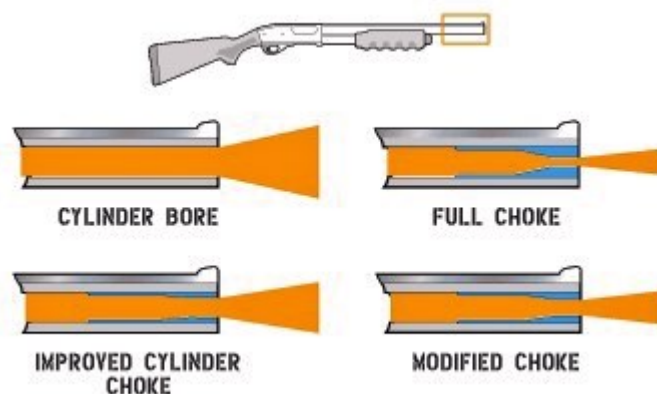
Barrel rifling twist rates are normally expressed as a ratio of twist to length. For example, a “1 in 7” twist rate means that the rifling completes one complete revolution inside the barrel for every 7 inches of length. A barrel with a ‘1 in 7’ twist rate is said to have a ‘faster’ or ‘higher’ twist rate than one with, say, a ‘1 in 12’ twist which has a ‘lower’ twist rate.

Note that lighter projectiles can be spun too fast by barrels with a high rifling twist rate causing them to disintegrate in flight. Conversely, heavier bullets may require a high twist rate barrel in order to impart sufficient spin for proper stabilization.

Firing creates a large amount of heat and vibration in the barrel, and this can also affect the accuracy of the firearm. It is advantageous to determine what load best suits the characteristics of a particular barrel so that it releases the projectile in the same way every time the rifle is fired.

Heavy barrels are popular with target and long range shooters as they are less quickly affected by heat and vibration. Lighter barrels are favoured by hunters as there is less weight to carry, and as fewer shots are fired heat is less of an issue.

### Shotgun Barrels



Shotguns are smoothbore firearms, and use a cartridge case filled with many round projectiles called shot.

When fired the cartridge hull opens, releasing the shot into the forcing cone.

The forcing cone guides the shot from the chamber into the barrel of the shotgun. On leaving the barrel the shot forms a pattern, which is affected by a device in the end of the shotgun barrel called a choke.

With a very open or no choke, the shot will spread apart quickly and lose effectiveness at a fairly short range. A choke constricts the end of the barrel, to essentially bunch the shot together as it leaves the barrel. A tighter choke will decrease the surface area of the shot pattern, making accuracy more critical; however it will increase the effective range of the shot pattern.

### Firearm Overpressure

Insofar as the firer is concerned, one of the most dangerous situations occurs when the bolt and receiver are forced to absorb higher pressures than those they were designed to handle.

The following all have the potential to cause dangerous over-pressures:

- **Oily barrel.** Always clean your barrel of oil before firing.

- **Excessive cartridge case lubrication.** The combination of expansion of the cartridge case against the chamber wall and the force of friction is the primary sealing system in a rifle. In some rifles (particularly older designs) excessive lubrication on the cartridge case can cause the case to move backwards placing great stress on the bolt head and receiver and/or possibly allowing gas to escape around the bolt head.
- **Excessive propellant.** If you load your own ammunition be particularly careful that your loads are in accordance with manufacturer specifications for the primer, projectile, caliber of cartridge and the propellant. Also ensure that you use a loading sequence that prohibits 'double loads'.

## Section 5 Quiz - Internal Ballistics

Answer True or False or select from A, B, C or D in the following questions:

1. The purpose of rifling in a barrel is:
  - A. To allow for build up of copper deposits.
  - B. To reduce the pressure in the firearm.
  - C. To impart stabilising spin to the bullet.
  - D. All of the above.
2. The purpose of the forcing cone in a shotgun is to control the pattern of the shot as it leaves the muzzle. \_\_\_\_
3. The following has the potential to produce dangerous over pressures in certain firearms:
  - A. An oily barrel.
  - B. Excessive propellant.
  - C. Excessive case lubrication.
  - D. All of the above.
4. In a shotgun a tighter choke increases the pressures in the firearm. \_\_\_\_

Now check your answers. Any that you get wrong, make sure that you look back through the Section and discover the reference to the correct answer.

These are **False**: 2, 4.

Multiple Choice: 1C, 3D.



## Section 6 - External Ballistics

### Introduction

External ballistics relates to the flight characteristics of the projectile/s after leaving the barrel. This topic is a science in itself, but for the purposes of this course we will keep to the basic concepts of maximum range, bullet drop and drift and shot pattern.

### Section 6 - VIDEO - Ballistics

**Warning:** features brief but graphic content of human injuries.

### Maximum range

The following is a guide to the maximum ranges of some rifles commonly used at Adelaide Target Shooters Club.

Cartridge	Bullet Weight (gns)	Muzzle Velocity (fps)	Maximum Range (m)
.22 Long Rifle	40	1255	1500
22-250 Remington	55	3500	3600
.243 Winchester	100	2900	3700
6.5 Creedmoor	140	2700	3800
.308 Winchester	165	2650	4050

The following is a guide to the maximum ranges of shot sizes for a shotgun. Note that the larger the pellet size, the longer the maximum range:

Shot Size	Individual Pellet Weight	Muzzle Velocity (fps)	Maximum Range (m)
9	0.75	1350	210
8	1.06	1350	220
7	1.25	1350	230
6	1.94	1350	250
4	3.22	1350	280
2	4.86	1350	300

It is important to realise that environmental conditions such as wind or atmospheric pressure at different altitudes can increase or decrease the maximum range of any given firearm. A margin of 20% should be added to the ranges listed in the tables above to ensure safety when shooting.

### Bullet drop and drift

Bullet drop and bullet drift are terms used to describe the effects of gravity and wind on a projectile during its flight. Gravity is a constant force and once a projectile exits the barrel of a firearm it immediately comes under the effect of gravity and begins to drop from the line of the bore.

It is for this reason that firearms are equipped with adjustable sights, so that the shooter can

adjust the angle of the barrel to counteract the effect of gravity at different ranges.

Bullet drift is a similar concept to bullet drop, however it operates in the horizontal plane, and it is caused by the effect of wind on the projectile. Unlike gravity, wind is not a constant and therefore bullet drift must be accommodated according to the conditions at the time of shooting. A rifle that is zeroed in calm conditions and then used in a 15 kph crosswind could shoot 5 cm or more to one side at 100 metres and more than double that at 200 metres and so on.

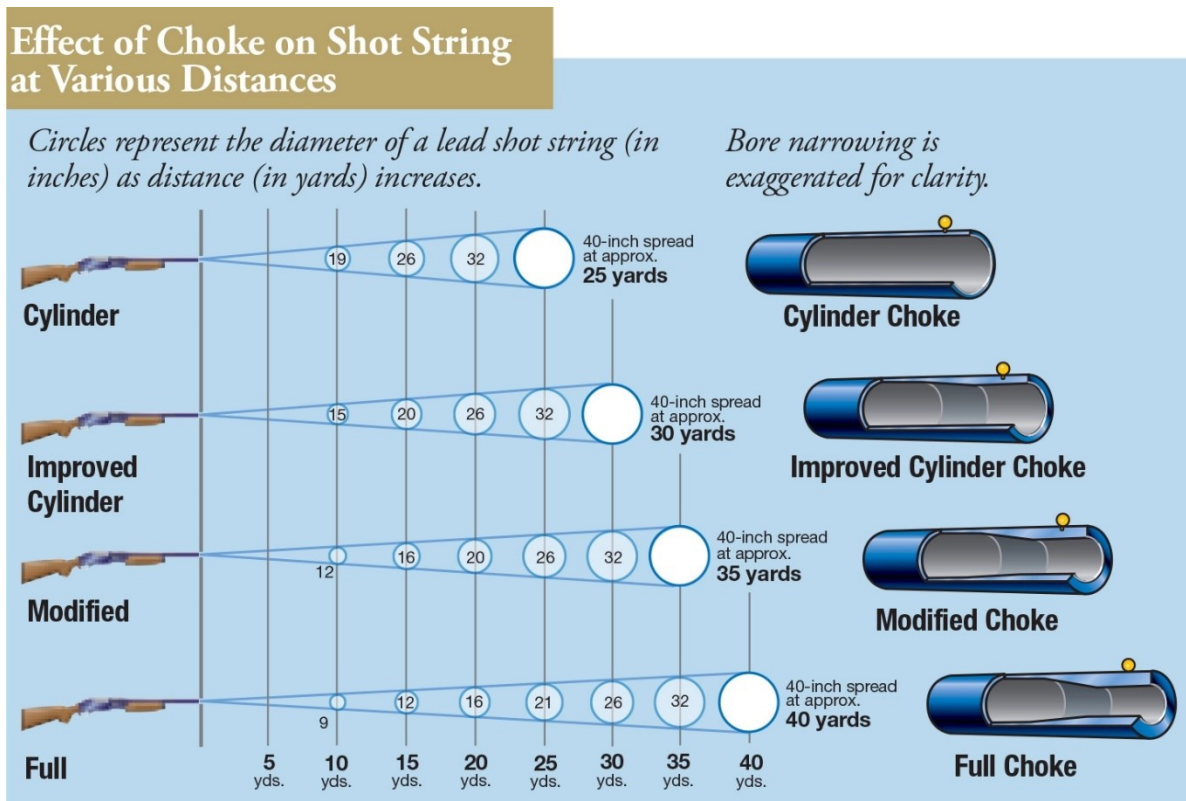
Learning to read the wind and adjust for it at the different ranges that you shoot is a skill that is acquired over time. Projectiles with a good ballistic coefficient, a medium to high velocity and heavier bullet weight for calibre tend to be less affected by wind. Accordingly these cartridges and projectiles are usually favoured by long range shooters

### Shotgun Pattern

Shotgun shot pattern is largely determined by the barrel choke and the shot type and wad design used in the shell.

The pattern is a representation of the density of shot at a particular distance.

Using an open choke or no choke at all will allow the shot to spread very quickly after leaving the barrel. At short range this may be useful to increase the chances of hitting a fast moving target, however as the range increases the shot spreads so far apart that gaps in the pattern will appear through which the target can escape.



Using tighter chokes will produce a pattern with a smaller frontal surface area, making

accuracy more critical, but increasing the amount of pellets and therefore energy delivered when the shot pattern is on target.

Watching clay targets shot at 30 metres or so will demonstrate this. Targets hit with a cylinder or improved cylinder pattern will tend to chip and break in half, whereas targets hit with an improved modified or full choke pattern will appear to explode into many tiny pieces.

## Section 6 Quiz - External Ballistics

Answer True or False or select from A, B, C or D in the following questions:

1. A full choke restricts the shot spread pattern but increases the effective range of that pattern. \_\_\_\_
2. Match the cartridge type with their applicable maximum range number:

Cartridge	Maximum Range Number	Maximum Range Number	Maximum Range (m)
.22 Long Rifle		1	3600
22-250 Remington		2	1500
.243 Winchester		3	3800
6.5 Creedmoor		4	4050
.308 Winchester		5	3700

Now check your answers. Any that you get wrong, make sure that you look back through the Section and discover the reference to the correct answer.

1 is True. 2. The order should be: 2, 1, 5, 3, 4.



## Section 7 - Handgun For Category H

### Category H (Not Available Yet But Coming Soon)

At Adelaide Target Shooters Club we have SAPOL Accredited Firearm Safety Training Instructors who conduct regular approved courses for those wanting to qualify for a Category H (Handgun) Firearms Licence.

To qualify for Handgun (H1) you must first obtain SAPOL approval, a National Police Check and 2 references. Then the training course comprises of a minimum 2 x Classroom safety and theory lessons and the following 6 (or more if required) practical lessons, 2 x Handgun semi-auto .22 rimfire, 2 x Handgun semi-auto centrefire and 2 x Revolver centrefire. This requires multiple Club visits to complete. There is a fee to cover the cost of the ammunition and items that you use.



After successfully completing the course and being issued with H1 you are not able to possess any Handgun for 6 months, nor supervise anyone else using them. During this time you must shoot a minimum of 3 events using a Club Handgun. Then until 1 year has passed there are strict limits on the types of Handguns that you can own. Annually you must participate in at least 6 Club organised competitive shooting matches for any single Handgun Category that you hold. If you have Handguns from multiple Categories, then a minimum of 4 matches for each Category is required.

Category 1 – air or gas operated handguns

Category 2 – .22 calibre rimfire handguns (long rifle or short)

Category 3 – centrefire handguns of not more than .38 calibre

Category 4 – handguns of more than .38 calibre

[Firearms Regulations 2017 Category H Licence Info](#)

[Handgun Safety and Proficiency Training Manual](#)

[VIDEO - How a M1911 works](#)



## Section 8 - Hunting

### Hunting

### Section 8 - VIDEO - Hunting And Ethics

**Warning:** features brief but graphic content of animal cruelty.

### Hunting Permits

All hunting in South Australia is regulated under the [National Parks and Wildlife Act 1972](#) (NPW Act) and the [National Parks and Wildlife \(Hunting\) Regulations 2011](#).

If you wish to hunt in South Australia you must have a basic Hunting Permit unless you are:

- destroying animals which are endangering human life.
- destroying animals (other than protected species) that are causing damage to crops, stock or other possessions on your land (your own or employer's property).
- taking an animal under any other permit regulations.

### Protected native animals and hunting

Most native mammals, reptiles and birds are fully protected. Without this protection many species could ultimately disappear forever. The NPW Act does allow for open seasons to be proclaimed so that certain species of protected game (duck and quail) can be hunted.

### Unprotected native animals, introduced animals and hunting

Unprotected native animals are listed in Schedule 10 of the NPW Act. You must still have a Hunting Permit before you can hunt unprotected native animals or introduced animals, Under the Act consideration is made for hunting and food gathering by Aboriginal people.

More information:

- [apply for a basic hunting permit](#)
- [permission to hunt on private land form](#)
- [hunting feral animals](#)
- [hunting and gathering by Aboriginal people](#)
- [duck & quail open seasons](#)

In South Australia, the following species are classified as game and can be taken during a declared open season:

- Stubble quail
- Pacific black duck
- Grey teal
- Hardhead (white-eyed duck)
- Mountain duck (Australian shelduck)
- Pink-eared duck



- Maned duck (wood duck)
- Chestnut teal
- Blue-winged shoveler

In South Australia, the following species are classified as feral and can be taken any time on private property with permission from landowners:

- Feral goat
- Pig
- Camel
- Deer
- Rabbit
- Red fox
- Starling
- Domestic pigeon
- European blackbird
- Spotted turtle-dove

For further information or to determine whether you need a permit, please contact:

DEW Fauna Permits Unit

Phone: (+61 8) 8124 4972

Email: [dewfaunapermitsunit@sa.gov.au](mailto:dewfaunapermitsunit@sa.gov.au)



## Section 9 - Course Completion Test

Congratulations, you have completed a major part of this Course. You are now required to answer the following test. This is an 'open book' exam which means that you can look back to the relevant Section of this Course to ensure that you fully understand the question and give the correct answer.

Once completed [online](#), an Accredited Firearm Safety Training Instructor will grade it and advise you of your result. You must answer 23 out of 26 questions correctly or you will be required to re-sit the test before attending final training at the Club.

Most questions are either True or False or Multiple Choice.

### Adelaide Target Shooters Club Firearm and Range Safety and Proficiency Training

#### The Test - (Complete Online)

1. People do not need to hold a firearms licence if they only use the firearms provided at the grounds of a recognised firearms club and are under the direct supervision of a person licenced for that category of firearm. \_\_\_\_
2. When pointing a firearm in a safe direction, that direction will depend on where you are and what you are doing. \_\_\_\_
3. It is OK to check if ammunition fits in a firearm whilst at home, so long as you do it somewhere safe. \_\_\_\_
4. A Danger signal will be:
  - A. A call of "Stop, Stop, Stop" by the Range Officer.
  - B. Raising a red flag above the butt or holding all targets at half-mast.
  - C. All of the above.
5. Whenever you are carrying a firearm on or about your person you must also carry your firearms licence. This can include an electronic copy on your mobile phone. \_\_\_\_
6. On the command 'Cease fire' you can continue to fire if you have a round in the chamber of your rifle after which you stop firing. \_\_\_\_
7. Before removing a firearm from the firing line you must:
  - A. Obtain the permission of the Range Officer.
  - B. Remove the bolt.
  - C. Tell other members of the Club what you are going to do to the firearm.
8. Safety is the responsibility of everyone on the range. \_\_\_\_

9. To purchase ammunition for any firearm which is registered to you, you need only produce your firearms licence. \_\_\_\_
10. There is no need to check that a firearm is loaded if an experienced person tells you that he or she has unloaded it. \_\_\_\_
11. It is an offence to discharge a firearm anywhere, including a range, if someone is likely to be injured. \_\_\_\_
12. When a ricochet occurs you have lost control of where the projectile will finish up. \_\_\_\_
13. A and B class firearms can legally be secured in the home by locking them in a Level 1 safe minimum of 2 mm thick steel sides and door which is securely attached to the building in which the firearms are kept. \_\_\_\_
14. Under the Firearms Act 2015 before you give, lend or otherwise part with possession of a firearm to another person for a period of less than 10 days, you must ensure:
- A. They are a member of a recognised Firearms Club.
  - B. They know how the firearm works.
  - C. They hold a firearm licence which authorises possession of that type of firearm.
15. Under the Criminal Law Consolidation Act 1935, a person who, without lawful excuse, discharges a firearm and who is reckless as to whether that act injures, annoys or frightens, or may injure, annoy or frighten, any person is guilty of an offence and could receive a maximum penalty of:
- A. Imprisonment for 1 year.
  - B. Imprisonment for 5 years.
  - C. Imprisonment for 3 years.
16. For complete safety with a firearm you should not rely on a safety catch alone because:
- A. They are unreliable and should not be used at any time.
  - B. Safety catches at best only supplement the safe handling of firearms.
  - C. Various persons have differing opinions on whether to use them.
17. Alcohol and many day to day medicines:
- A. May affect your eyesight and cause you to shoot erratically.
  - B. Dull and slow your mental and physical reactions.
  - C. May produce hallucinations that could cause you to be dangerous.
18. When you are in possession of your firearm(s) and away from the place where your firearm(s) are normally kept (e.g. away from home on a hunting trip) you must secure your firearm(s) or ammunition by:
- A. Locking them in your vehicle.
  - B. Having them with you in a Motel room.
  - C. Securing them in a friends gun safe.

- D. Using the best means reasonably available to you in the circumstances.
19. The Firearms Licence Category which is a legal requirement for all Shooting Club Members is:
- A. Licence Category C.
  - B. Licence Category 1.
  - C. Licence Category 4.
20. The person in charge of the safety of the range who issues all commands to the shooters is known as:
- A. The Range Superintendent.
  - B. The Club Captain.
  - C. The Range Officer.
21. The danger range for a .22 rimfire projectile is:
- A. 1500 metres.
  - B. 2000 metres.
  - C. 2500 metres.
22. When a firearm is said to be in a 'Safe condition' this means:
- A. All ammunition is removed and the magazine is also removed (if possible).
  - B. The bolt and magazine are removed.
  - C. The action is open, the magazine is removed (where possible) and an orange or yellow empty chamber indicator is inserted.
23. The first action when cleaning a firearm is:
- A. Check that you are not going to use a nylon brush with a bore copper solvent.
  - B. Ensure that the cleaning rod is not too big for the barrel.
  - C. Carry out safety precautions and ensure the firearm is not loaded.
24. The purpose of the forcing cone in a shotgun is to control the pattern of the shot as it leaves the muzzle. \_\_\_\_
25. If you experience a misfire of any kind on the firing line you must:
- A. Immediately 'Make safe' your firearm.
  - B. Wait 30 seconds before attempting to clear the firearm.
  - C. Attract the attention of the Range Officer.
  - D. B and C above.
26. Write rule number 1 from the National Firearms Safety Code:

**Adelaide Target Shooters Club**  
**Firearm and Range Safety and Proficiency Training**  
**Course Completion Test**

\_\_\_\_\_ Date

\_\_\_\_\_ Name

Question Number	Answer		Question Number	Answer	
1			14		
2			15		
3			16		
4			17		
5			18		
6			19		
7			20		
8			21		
9			22		
10			23		
11			24		
12			25		
13					

26 \_\_\_\_\_



## Section 10 - Oi Oi Oi

### Firearm History

After the Chinese invented black powder during the 9th century, these inventions were later transmitted to the Middle East, Africa, and Europe. The direct ancestor of the firearm is the fire lance. The prototype of the fire lance was invented in China during the 10th century and is the predecessor of all firearms. [Learn more ...](#)

### Nightforce Optics

A *South Australian* dentist founded one of the premier optics companies of our time. Nightforce Optics is a major supplier to the US Military.

Raymond Dennis - I'm from Southern Australia and was born in 1954. My parents were immigrants from Germany after World War Two. At a very early age I learned to sit on the back of my grandfather's motorbike while he went rabbit hunting. In Australia it was then still a free country, where you could go hunting, go shooting, and no one really frowned upon you if you had a rifle on your back while riding on a motorbike through a city to get into the hills to shoot rabbits. [Learn more ...](#)

### Warne

The history of Warne Manufacturing Company goes back to January of 1947 and to *Adelaide, South Australia*. On that date, John Llewellyn Warne, (known to his friends as Jack), with the help of a partner founded a little company named Sporting Arms Limited. Its goal was to manufacture rifle barrels. [Learn more ...](#)

### Kimber

Kimber was founded as "Kimber of Oregon" in 1979 by Jack Warne and his son Greg Warne in the small town of Clackamas, Oregon. An Australian, Jack Warne moved to Oregon in 1968 after Portland-based Omark Industries purchased the Australian firearms manufacturer, Sportco, he had founded in *Adelaide, South Australia*, following World War II. [Learn more ...](#)

### Hodgdon

Some of Hodgdon's best powders are made "*Down Under*" in *Australia* and the business relationship between Hodgdon and Australian manufacturer Australian Defense Industries (ADI) has been ongoing for more than two decades. [Learn more ...](#)

### ADI Powders

ADI Powders cater for the full range of burning rate requirements from the fast burning handgun and shotgun powders to the very slow large calibre rifle powders. [Learn more ...](#)

### Lithgow Arms

From the .303 and SLR to today's Austeyr SA2 and the EF88, Lithgow represents a unique heritage - the home of small arms in *Australia*. [Learn more ...](#)

## Notes



The author wishes to thank his mother and John Moses Browning, and also respectfully acknowledges the following references and sources used in the preparation of this exceptional Firearm and Range Safety and Proficiency Training Manual:

- The Sporting Shooters Association of Australia.
- SAPOL Gun Laws in South Australia, What Do I Need To Know.
- Firearms Act 2015.
- Firearms Regulations 2017.
- National Firearms Safety Code.
- Criminal Law Consolidation Act 1935.
- Department for Environment and Water.
- Firearm and Range Safety Training Program compiled by Mike Sutherland.
- The Hahndorf Rifle Club Training Manual written by Graham Capper.
- A Guide to Hunting & Shooting in Australia by Geoff Smith.
- Videos and illustrations from public domain shooting and firearm related sources.



[adelaidetargetshooters.club](http://adelaidetargetshooters.club)

52 Rifle Road, Monarto South SA 5254