



# QSC Range Safety Officer Certification Course





# *Administrative Information*

- ***No Live Ammunition in the Classroom***
- Restrooms
- Emergency Exits
- Refreshments/Snacks
- Smoking permitted outside away from the doors
- Breaks
- Cell Phones
- Some Information is from the NRA RSO Course
- Ensure you Sign-In
- Ask Questions

***NO LIVE AMMUNITION IN THE CLASSROOM!***



# *Why Are We Here?*

- Per Marine Corps Order (MCO) 3550.9 (*Marine Corps Ground Range Certification and Recertification Program*), Commanders are required to appoint their Range Officers in Charge (OIC) and Range Safety Officers (RSO) in writing. This is to certify that the OIC is knowledgeable in the weapon systems and ammunition for which they are responsible and the RSO is weapon system qualified
- Per MCO 3570.1C (*Range Safety*) and MCBO (Marine Corps Base Order) 3570.1B (*MCBQ Range Regulations*) individuals appointed to OIC and RSO duties must be qualified and certified and to perform those duties
- Per Department of the Army (DA) Pam 385-63 (*Range Safety*), personnel in non-military organizations designated as OICs and RSOs will complete a pistol and rifle course approved by the National Rifle Association, or equivalent



## *Course Goals*

- To meet MCO mandates for familiarizing Quantico Shooting Club (QSC) members to become MCBQ Range Safety Officers who possess the ***knowledge, skills, and attitude*** essential to organizing, conducting, and supervising safe shooting activities and range operations





# Course Outline

- **Subjects Include:**

- Defining the roles of the range OIC and RSO
- The purpose of range Standard Operating Procedures (SOP)
- Procedures for opening, operating, and closing a range
- Conducting a range safety briefing
- Required communications
- Emergency procedures / First Aid ( cursory, not all inclusive)
- How to safely unload weapons and correct stoppages and malfunctions
- Lessons Learned on the Calvin A. Lloyd Range complex operations
- Practical Exercise



# *NRA Gun Safety Rules / USMC Gun Safety Rules*

- ***NRA Gun Safety Rules:***

- Always Keep The Gun Pointed In A Safe Direction
- Always Keep Your Finger Off The Trigger Until Ready To Shoot
- Always Keep The Gun Unloaded Until Ready To Use

- ***USMC Weapons Safety Rules – Sign You See on Every MCBQ Range:***

- Treat every weapon as if it were loaded
- Never point a weapon at anything you do not intend to shoot
- Keep your finger straight and off the trigger until you're ready to fire
- Keep the weapon on “safe” until you intend to fire





# ***Section I: Duties of the OIC / RSO***



# *Range Safety: OIC/RSO*

- ***OIC and RSO MUST:***

- Have read and understand MCO 3570.1C (Range Safety)
- Have read and understand MCBO 3570.1B (MCBQ Range Regulations)
- Have read and understood the QSC Range Safety SOP
- Have read and understand the specific Weapons Training Battalion (WTBN) Range SOPs for ranges for which they are responsible
- ***Be able to fully influence the safe conduct of those range and events to which they have been assigned***

- ***OIC and RSO WILL NOT:***

- Participate in LIVE FIRE events, unless there are enough RSOs to roll over (3 Minimum - OIC/RSO/RSO)
- Relinquish OIC or RSO responsibilities (rollover) to another without prior approval from the Fire Desk





# *Range Safety: OIC/RSO*

- ***OIC and RSO MUST:***

- Maintain positive communication with Range Control:

- Two forms of communications: Primary Radio / Secondary Cell Phone
- Cell phone MUST reach either the OIC or RSO on the range
- If either form of communications is lost, CEASE FIRE immediately and re-establish comms

- OIC and RSO “on duty” must always have a radio in their possession

- Required for the immediate response to emergency situations

- ***Failure to respond will result in an immediate cease fire***

- Continued failure to maintain communications will result in notification of the Base Commander and would likely adversely impact on the QSC as a whole
- May result in suspension of OIC/RSO certifications



# *Role Of The Officer in Charge*

- The OIC is the ultimate safety authority on a range, supported by the RSO(s)
- The OIC generally conducts the Safety Briefings, but can delegate to an RSO(s)
- The OIC is responsible for coordinating the Range Schedule, course of fire, range checkout, equipment and range calendar notes with the Chief RSO and the RSO(s) team
- The OIC directs all shooting activities as prescribed by the QSC and Range Specific Standard Operating Procedures (SOP)
- ***Be able to fully influence the safe conduct of those range and events to which they have been assigned***



# *Role Of The Range Safety Officer*

- The RSO(s) supports the OIC
- The RSO supervises shooting activities as prescribed by the QSC and Range Specific Standard Operating Procedures (SOP)
- Ensures all personnel wear the appropriate Personal Protective Equipment (PPE), which at the minimum includes eye protection and hearing protection
- Ensures proper supervision of personnel performing misfire procedures – Firearms do not leave the range with a round in the chamber
- Ensures control of target areas to prohibit entry by unauthorized personnel
- ***Be able to fully influence the safe conduct of those range and events to which they have been assigned***



# ***Section II: Range Standard Operating Procedures***





# *Range SOPs*

- ***Purpose***

- Standardize processes

- Organizational Information
    - Range Capabilities
    - Range Operations
    - Range Rules and Regulations
    - Range Conflicts and Restrictions
    - Emergency Response Plans

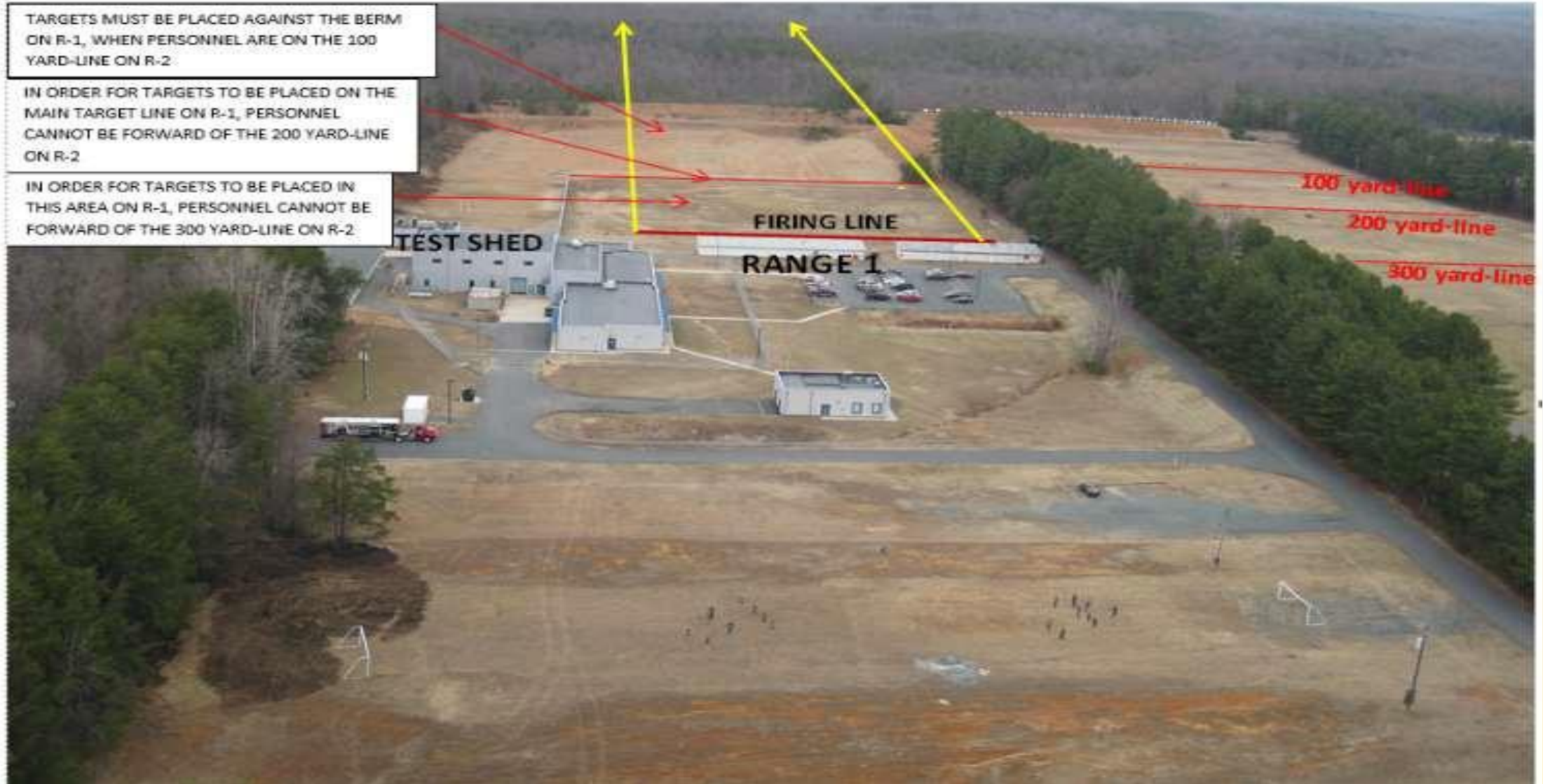
- ***WTBN Range SOPs***

- Specific to each range

- ***QSC Range SOP***

- QSC Specific procedures
  - Appends QSC procedures to WTBN Range SOPs

# Surface Danger Zone Conflicts





# Surface Danger Zone Conflicts

- Overhead representation of previous slide's SDZs





# Surface Danger Zone Conflicts

## SAT Range and Ironman Range SDZ Conflicts



- **When any SAT Range Bays are “HOT”**
  - There can be no one forward of the Firing Line on Ironman!
  - No Ironman downrange movement!
- **When SAT Range Bay 4 Firing Line is “HOT”**
  - There can be no one on Lanes 1 & 2 of Ironman!

**Coordination**

**Cooperation**

**Communication**





# ***Section III: Range Operations***



# *Sequence of Range Operations*

- ***Before Operations***

- Pick up Range Box & additional gear from QSC Clubhouse (QSC Range Safety Box & Range Flags)
  - Additional gear: Orange cones, Trash Bag(s), Sign-in / DODIC sheets, checkout Rangefinder (optional)
- Pick up Gate Keys, Radios (2), and Range flags from WTBN Officer of the Day (OOD), also called the “S3”
- Verify Communications with Range Control (RC) and WTBN OOD
  - “Range Control, this is Ironman Range, initial radio check”
- **Contact RC and Request to Occupy range, record time**
- Inspect range and ensure flags are up and barriers closed
- Ensure all participants sign in and check membership cards / guest pass (This is for liability / compliance). Guest MUST have a guest pass for that day. If not, send them and member back to QSC office to sign waiver and pay \$10
- Communicate DODICs to RC during Occupy Request, or before Hot Request
  - The Fire Desk will approve or disapprove DODICs based upon down or cross range use
  - They may approve a caliber (50 BMG) but not another (300WM) which seem in conflict
  - It’s their call and we do not argue with the Fire Desk/ Range Control – Contact the Board to discuss
- Conduct Safety Briefing
- **Verify an EMT is on site**
- **Contact RC and Request to go “Hot”, Confirm OIC and RSO have read MCBQ Live Fire Brief, record time and relay to / Inform OOD**



# *Sequence of Range Operations*

- ***During Operations***

- Once approved to go Hot, you must conduct radio checks every 30 minutes with RC and every 60 minutes with OOD (at the top and bottom of the hour regardless of when you went Hot)
- Contact RC with requests to roll over OIC or RSO and request new DODICs as needed
- Supervise participants to ensure safe firearms handling practices
  - Pay particular attention to people who may be new shooters. They tend to be unfamiliar with their weapon's traits or function, or how to clear the weapon
  - Pay particular attention to first time range visitors, active military, and those groups with a large number of firearms. Active military train differently and may not understand QSC REC FIRE safety differences
- Inspect range, and ensure participants pack out their debris
  - If they don't police their brass/cases, the RSOs will have to do it!
- Reissue Safety Briefing to new participants (NOT optional!)



# *Sequence of Range Operations*

## • ***After Operations***

- Contact RC and Request to go “Cold”, record time on sign-in sheet, and relay to / Inform OOD
- Inspect range, and ensure participants pack out their debris, pick up brass remaining, pick up trash remaining
- Lower flags, return barriers to their proper state
- Use cell phone to provide “End of Training Report” to RC
  - Count the number of rounds for each DODIC and report the totals to RC
- Contact RC and notify of departure from range, record time
- Return gear to OOD
- Return gear to QSC Clubhouse, turn-in sign-in sheets to RSO Desk In Box, and **report any issues** with the range and/or participants to QSC BOD





# ***Section IV: Range Communications***



# Communications

- **Required Communications**

- All Medical Emergencies
- All Fires
- Missing Personnel
- Any incident involving ammunition (i.e., rounds out of impact)
- Requesting change in range status (i.e., “Occupy”, “Hot”, “Cold”, “Departure”)
- Requesting to switch / “rollover” OIC or RSO
- Requesting to add new DODICs
- Radio Checks
  - Range Control - Every 3 hours on the hour for a non-firing status
  - Range Control - Every 30 minutes on the hour and half hour for live fire
  - OOD - Every 60 minutes on the hour for live fire
- End of Training Report



# Communications

- **Means of Communication:**
  - Primary: Radio
  - Secondary: Cell Phone
- **Call signs**
  - Range Control Facility: *Range Control*
  - You: *Specific Range Name* (Ironman, Shotgun Range, SAT Range)
- **Proper radio procedures – Professional – Not CB Radio “Good Buddy”**
  - Non-essential admin comms prohibited on the Range Control Safety Net
  - Admin comms permitted on the WTBN Safety Net ONLY,
  - **All radio and telephone comms with the RC are recorded**
  - Fire Desk Operators do not make decisions, they execute procedures
  - For Inter-range communications, you can use WTBN Safety Net OR Mobile phones OR QSC Pit Radios
- **In Case of Emergencies – Keep all Radio Channels Clear**
  - If not involved directly in the emergency, cease all radio transmissions
  - Range Control has not forgotten about you
- **If there are issues, call the clubhouse and speak to a QSC Board Member**



# ***Section V: Range Safety Briefing***





# *Range Safety Briefing*

- ***WHAT***
  - Prepares shooters to safely and efficiently participate in shooting events
- ***WHEN***
  - Conducted before Requesting a Hot Time and commencing Live Fire
- ***WHERE***
  - Conducted within view of the range & shooters, varies by Range



# *Range Safety Briefing Topics*

- ***Standard Range Safety Briefing Steps***

- Introduce RSO Team
- Purpose of the Shooting Event, i.e., “This is a REC FIRE”
- Range Layout and Limits
- Range Safety Rules
- Firing Line Commands
- Emergency Procedures

- ***Example provided in the QSC Range SOP***



# *General Range Safety Rules*

- Know and obey all range rules
- Know where others are at all times
- Shoot only at authorized targets
  - Do not shoot the wildlife – Call a ceasefire until they depart the range
- Malfunctions
  - Gun malfunction
  - Ammunition malfunction
- All firearms must be brought to the firing line cased, and only uncased or re-cased when the firing line is Hot
- Do not handle a firearm or stand at the firing line where firearms are present while firing line is Cold and others are downrange!
- Stop shooting immediately upon the command “**Cease Firing**”



# *Steel Targets*

- **Ballistic Steel Targets**

- 3/8" thickness
- AR 500

- **Minimum engagement distances for portable ballistic steel targets:**

- Pistol - 10 yards (No pistol magnum calibers, FN 5.7 or +P ammo on steel)
- Magnum Caliber Pistols (.357mag, .44mag, +P) – 25 yards
- Pistol (Braced) / PCC / Rimfire Rifle - 25 yards
- Shotgun (Buck / Bird Shot) - 11 yards
- Shotgun (Slug) - 55 yards
- 5.56mm / .223 Ball - 110 yards
- 7.62mm / .308 Ball - 110 yards
- .300 Win Mag - 320 yards
- Steel shooters may be segregated to one side of the firing line or other, and with a minimum lateral distance of 6 feet between steel shooters.
- PLEASE NOTE - No dueling trees, Texas Stars, or other gimmick-like targets.
- If you feel a target system is unsafe (i.e, spalling, bullet splash), you have the authority to remove that system or move it to greater distance!



# ***Section VI: Emergency Procedures***





# *Purpose Of Emergency Procedures*

- Take control of the situation
- Minimize confusion during an emergency
- Save time responding to an emergency



# *MCBQ Medical Evacuation Procedures*

- OIC or RSO immediately contacts RC
- Fires Desk Operator will immediately contact emergency dispatch
- All details and requests from OIC/RSO are relayed in REAL TIME
- OIC or RSO will be the on-scene commander and will initiate action for the MEDEVAC until first responders arrive
- The RCF will relay the direct steps to take to accomplish the MEDEVAC
- A Range Management Branch Patrolman (and possibly a Provost Marshall Office Officer) will be immediately dispatched to the scene to assist the OIC/RSO in any way necessary and provide additional information to/from the scene
- Additional RMB personnel will be dispatched to open any gates to facilitate the MEDEVAC in the most direct and expeditious manner



# *MCBQ Medical Evacuation Procedures*

- Range Control will command a complex-wide “Cease Fire” and verify all ranges have stopped firing and the airspace is clear
- OIC and RSO MUST maintain radio contact with Range Control at ALL times
- If not directly involved, follow the Check or Cease Fire commands, stay off the radio, and await instructions
- *Range 4 should immediately open gates at checkpoints 8 and 9*



# *Emergency Categories*

- Injuries are classified into the following categories in order to aid in casualty evacuation from the RTA.
  - **ROUTINE.** Routine injuries are those injuries that are not threatening to life, limb or eyesight, and conditions or illnesses treatable by medication or procedures available at the base medical facilities.
  - **PRIORITY.** Priority injuries are those injuries that require immediate medical attention but are not threatening to life, limb, or eyesight if treated promptly.
  - **URGENT.** Urgent injuries are severe injuries that are threatening to life, limb, or eyesight and require immediate medical attention.
  - **MASS CASUALTY.** A mass casualty is a series of injuries with multiple priority and urgent medical patients.

***General Rule: LIFE, LIMB, or SIGHT***



# *Emergency Procedures*

- ***Standardize steps and the sequence in which they are performed***
  - Take charge of the situation
  - Call for help, if required
  - Render aid, within scope of training
  - Direct medical help to location
  - Take detailed notes (Reports)





# *Step #1: Take Charge Of The Situation*

- ***Command: Cease firing, unload and show clear, and stay in place***
- ***Have an RSO ensure firearms are clear***
- ***Evaluate the situation***
  - Routine, Priority, Urgent?
  - ***If Priority or Urgent, radio Range Control immediately, our QSC EMT monitors Range Control Safety channel***
- ***Designate helpers if necessary***
  - To call for help, if required
  - To render aid, within scope of training
  - To guide medical help to location
  - To take notes (reports)



## Step #2: Call for Help

- ***In the event of a Priority or Urgent emergency, contact Range Control Immediately!***
  - The radio is the primary means of communications
  - Cell phones are secondary
  - Have radio / phone numbers handy (RCF, OOD, QSC clubhouse – Also printed on the back of your Range Sign-In Sheet)
- ***QSC EMT is monitoring the Range Control Safety channel***
- ***Provide the RCF the required information in the Initial Report***
  - Location of Emergency
  - Is the victim conscious or unconscious
  - Number and types of victim(s) (i.e. Urgent, Priority, Routine)
  - Type(s) of injury(ies), victim(s) present condition, if a medical professional is on-scene, and what medical aid has been provided
  - HEAT CASE: Body Core Temp and mental status
- ***Additional information:***
  - Victim(s) name
  - Victim(s) known medical (blood type, medical allergies)
  - Source of injury/illness (i.e. snake bite, gun shot, shrapnel, etc.)
  - Hazards to aircraft, vehicle at the casualty collection site



## *Step #3: Render Aid*

- **Training and Equipment**

- Check range for medical professionals on site
- QSC Range Box has a Bleeding Control Kit and various First Aid Items
- WTBN Range Box has additional Bleeding Control Kit

- **Good Samaritan Law**

- Reasonable and Prudent

- **Aid**

- Determine level of care - Call for help, self-treat or have EMT treat?
- Club has EMT on-site

- **Gather additional medical information**



## *Step #4: Direct Medical Help To Location*

- ***Position one or more persons to direct the emergency vehicle:***
  - On main road to entrance of the facility
  - On road to range
  - Outside the building
  - Anywhere necessary to reduce confusion and speed the arrival of medical assistance to the victim



## *Step #5: Take Notes (Reports)*

- Take notes on the times different actions were taken
- Get statements from witnesses
- Complete required SOP form (TBD)
- Notify authorities if necessary





# QSC Range Safety Officer Certification Course



**10 Min BREAK**





# ***Section VII: Gun Stoppages & Malfunctions***

## ***“Unload and show Clear”***



# *Learning Objectives*

- ***Learning Objectives***

- Upon completion of this lesson, you should be able to:
  - Demonstrate how to safely fill a magazine, load & unload a gun
  - Demonstrate how to safely take a gun from a shooter
  - Explain the difference between a stoppage and a malfunction
  - Demonstrate how to clear common stoppages & malfunctions



## *Loading a Gun*

- Always point the gun in a safe direction
- Always keep your finger off the trigger until ready to shoot
- Engage the mechanical safety (if possible)
- Insert ammunition (magazine) into gun
- Open the action and chamber a cartridge
- Close the action and engage the mechanical safety



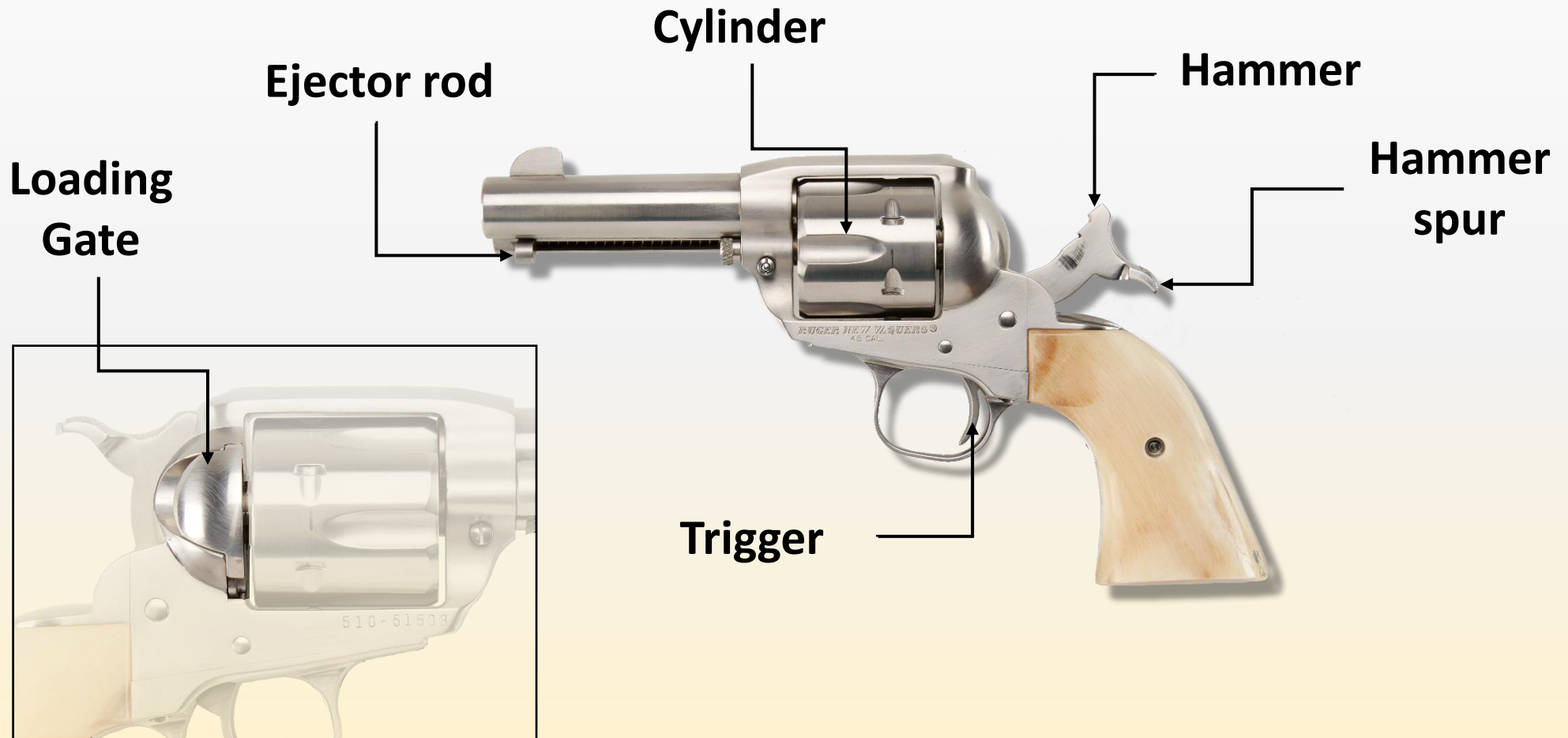
## *Unloading a Gun*

- Always keep the gun pointed in a safe direction
- Always keep your finger off the trigger until ready to shoot
- Engage the mechanical safety (if possible)
- Open the action
- Remove the ammunition source (magazine or ammunition from tube)
- Physically and visually inspect the chamber and magazine areas
- Leave the action open if possible & insert an Empty Chamber Indicator(ECI)
- Engage the mechanical safety

**\*\* Always follow the gun manufacturer's instructions for loading and unloading.**



# Single-Action Revolvers



# *Loading a Gun*

## *Cylinders (Single Action) (Demonstration)*

1. Open the loading gate.
2. Rotate the cylinder to align an empty chamber with the loading port.
3. Insert a cartridge into a chamber.
4. Repeat, until loaded.





# *Loading a Gun*

## *Cylinders (Single Action) (Demonstration)*

1. Open the loading gate.
2. Rotate the cylinder to align an empty chamber with the loading port.
3. Insert a cartridge into a chamber.
4. Repeat, until loaded.



# *Loading a Gun*

## *Cylinders (Single Action) (Demonstration)*

1. Open the loading gate.
2. Rotate the cylinder to align an empty chamber with the loading port.
- 3. Insert a cartridge into a chamber.**
4. Repeat, until loaded.



# *Loading a Gun*

## *Cylinders (Single Action) (Demonstration)*

1. Open the loading gate.
2. Rotate the cylinder to align an empty chamber with the loading port.
3. Insert a cartridge into a chamber.
4. Repeat, until loaded.



# *Unloading a Gun & Stoppages*

## *Cylinders (Single-Action)*

- **Cylinders (Revolvers)**
  - Open the Loading gate
  - Remove Cartridges

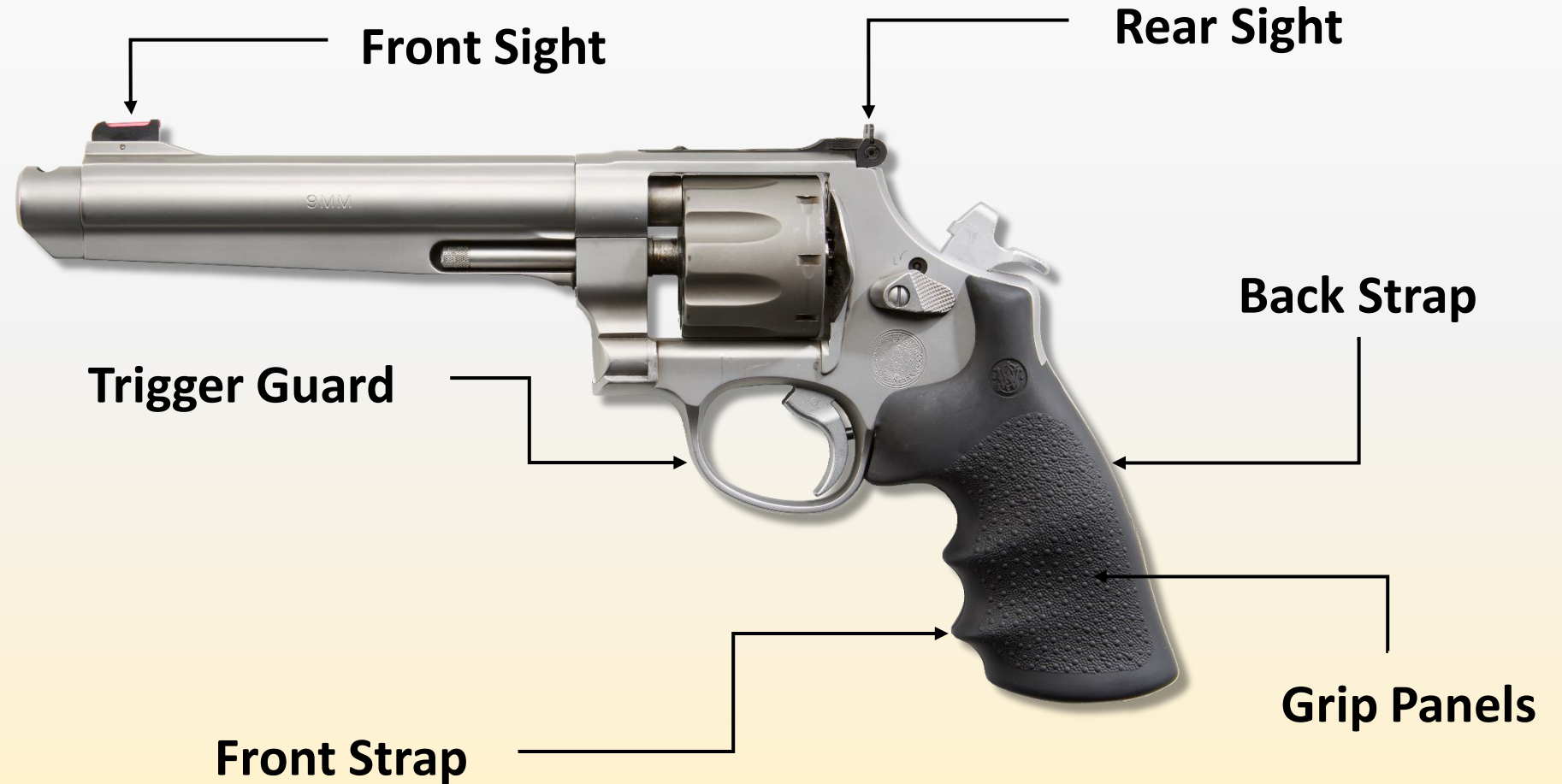


# *Double-Action Revolvers*





# *Double-Action Revolvers*



# *Double-Action Revolvers*





# Loading a Gun

## *Cylinders (Double Action) (Demonstration)*

1. Activate the cylinder release.
2. Swing the cylinder out of the frame.
3. Insert a cartridges into chambers.
4. Swing the cylinder back into the frame.



# Loading a Gun

## *Cylinders (Double Action) (Demonstration)*

1. Activate the cylinder release.
2. Swing the cylinder out of the frame.
3. Insert a cartridges into chambers.
4. Swing the cylinder back into the frame.



# Loading a Gun

## *Cylinders (Double Action) (Demonstration)*

1. Activate the cylinder release.
2. Swing the cylinder out of the frame.
3. **Insert cartridges into chambers.**
4. Swing the cylinder back into the frame.



# Loading a Gun

## *Cylinders (Double Action) (Demonstration)*

1. Activate the cylinder release.
2. Swing the cylinder out of the frame.
3. Insert a cartridges into chambers.
4. Swing the cylinder back into the frame.







# *Emptying Magazines, Cylinders And Guns*

## *Cylinders (Thumb Press)*

### **Cylinders (Revolvers)**

- Swing Out the Cylinder
- Remove Cartridges





# *Emptying Magazines, Cylinders And Guns*

## *Cylinders (Palm Strike)*

### **Cylinders (Revolvers)**

- Swing Out the Cylinder
- Remove Cartridges



# *Loading a gun*

## *Semi-Automatic*



# *Loading a gun*

## *Semi-Automatic*





# *Loading a gun*

## *Hinge Action*



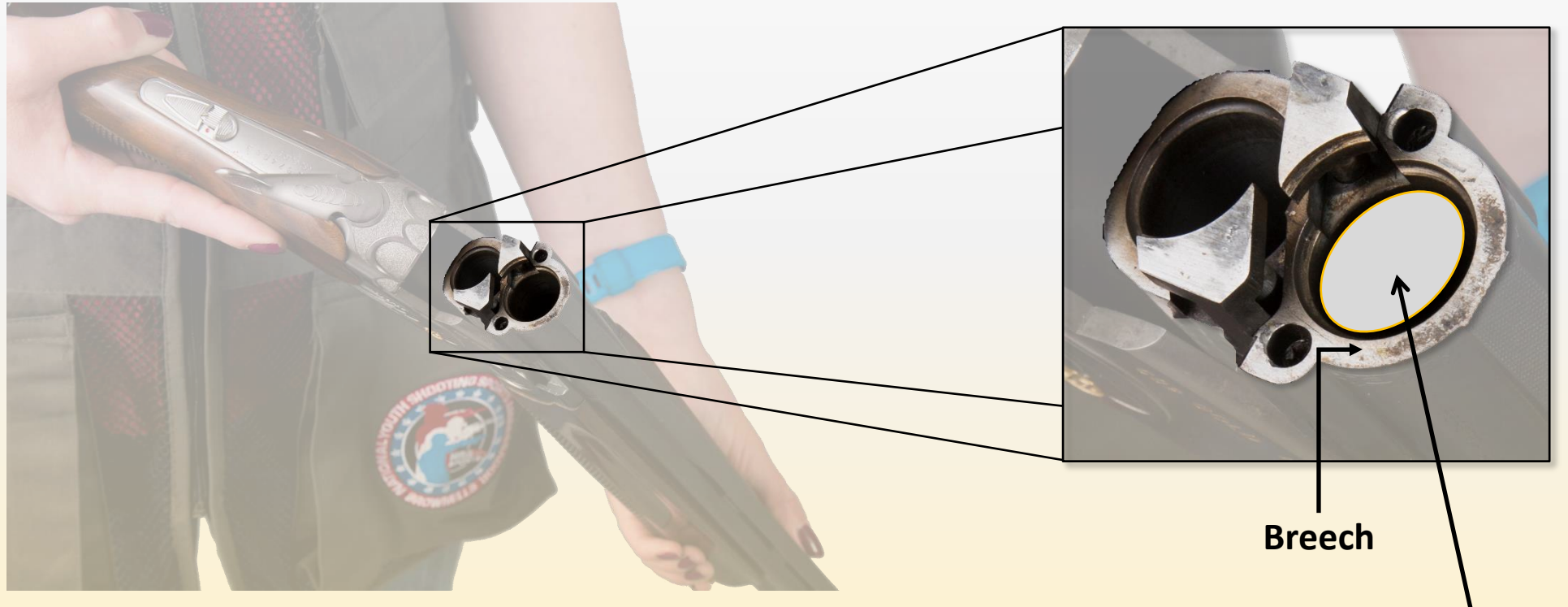
# Loading a gun

## Hinge Action



# Loading a gun

## Hinge Action



# *Loading a gun*

## *Hinge Action*



Loading





# *Emptying Magazines, Cylinders, And Guns*

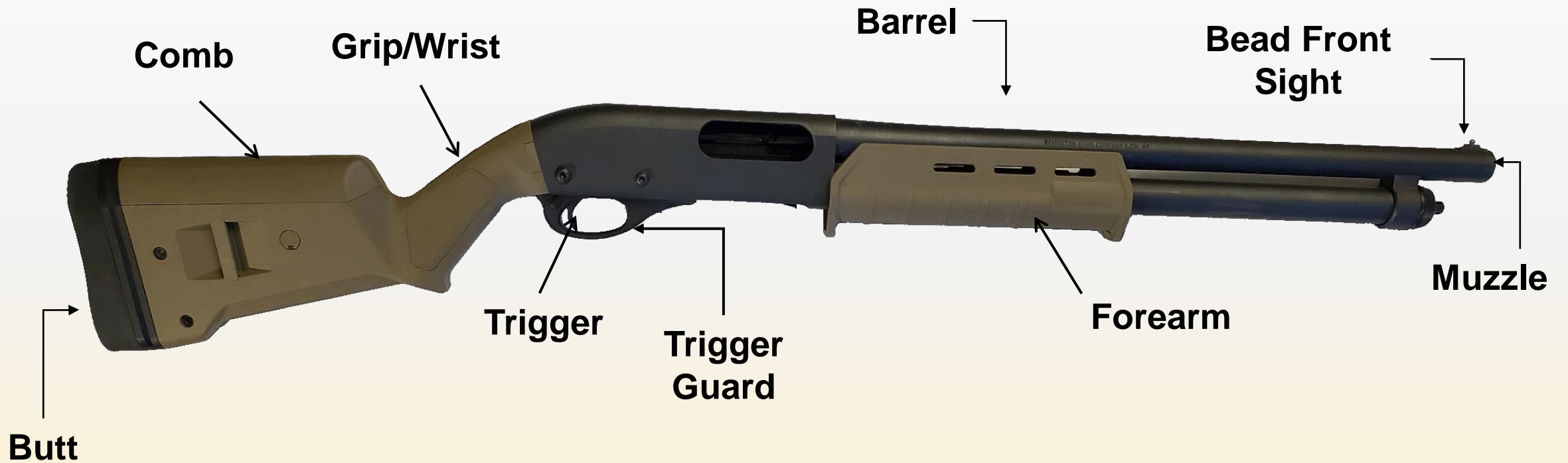
## *Hinge Action*



Unloading

# Loading a gun

## Slide/Pump Action



# Loading a Gun

## Slide/Pump Action



NRA



# *Emptying Magazines, Cylinders, And Guns*

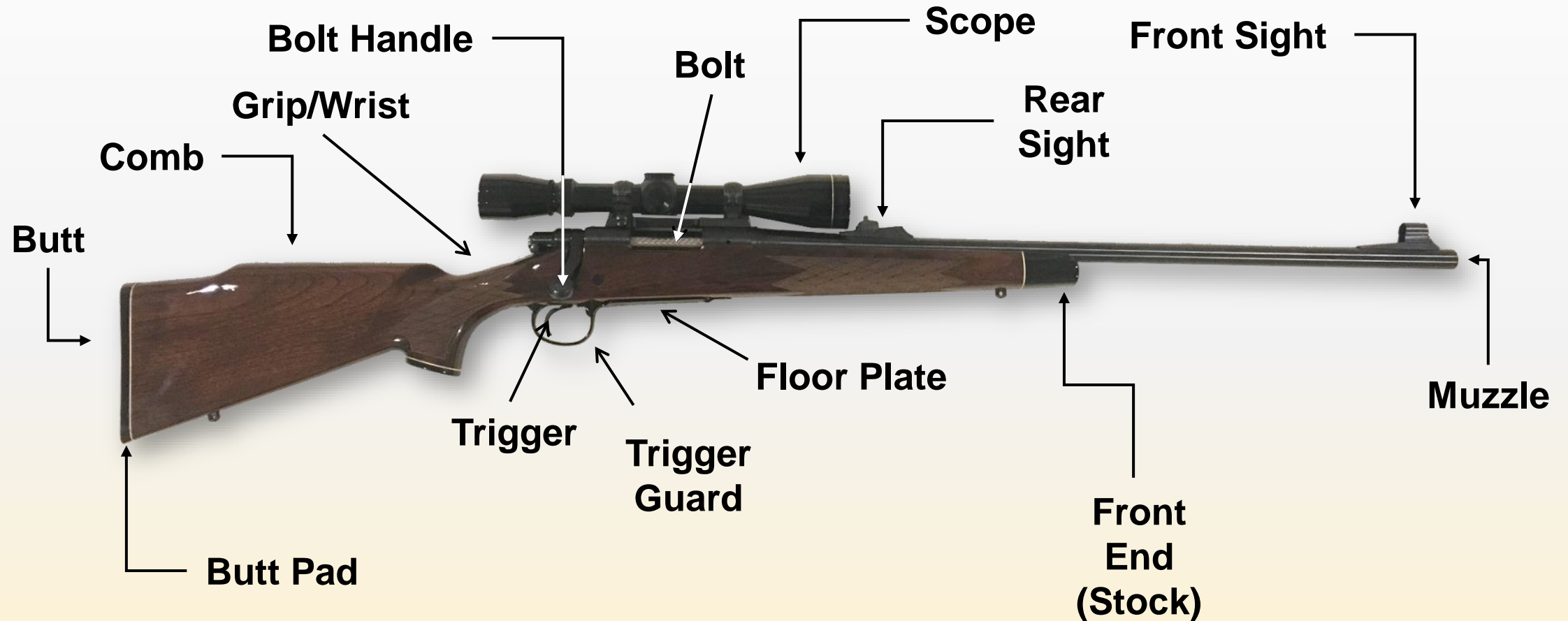
## *Pump/Slide Action*





# Loading a gun

## Bolt Action



# *Loading a gun*

## *Bolt Action*



# Emptying Magazines, Cylinders, And Guns

## *Hinged Floor Plates*

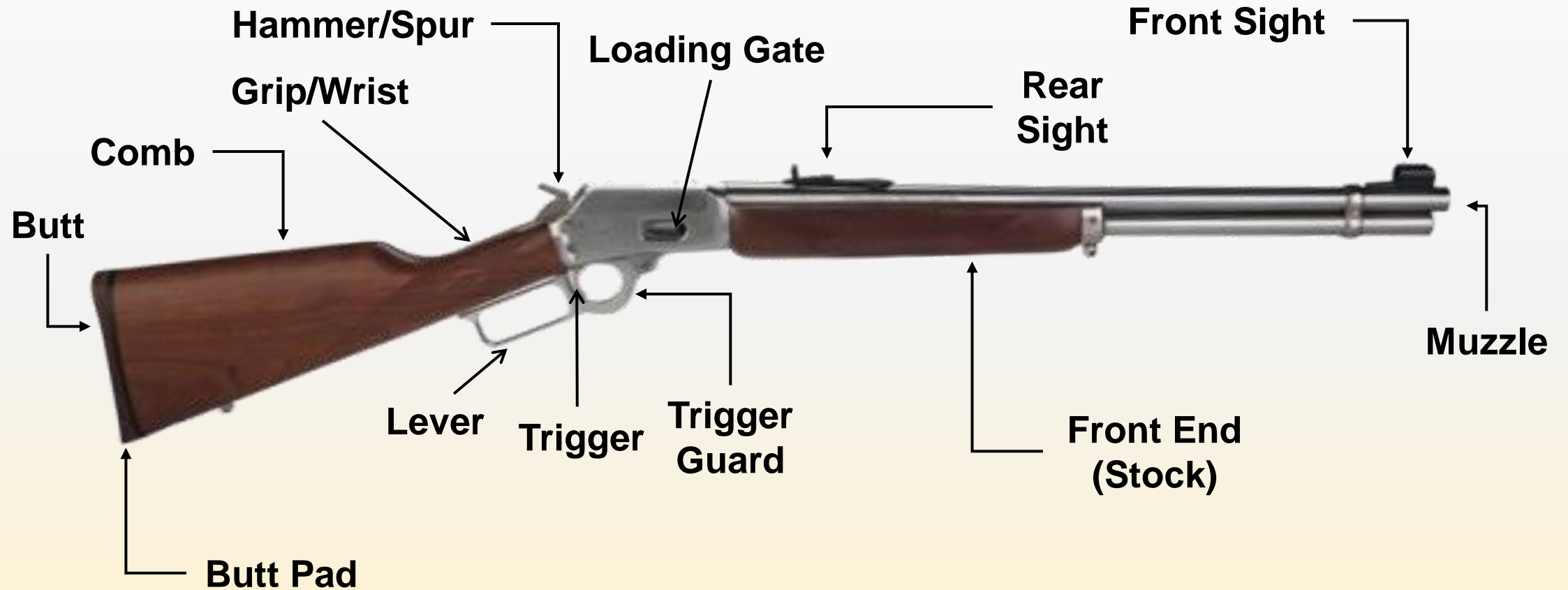
- **Hinged Floor Plates**

- Open bolt to the rear
- Drop the floorplate



# Loading a gun

## Lever Action



# *Loading a gun*

## *Lever Action*





# *Loading a gun*

## *Lever Action*





# *Emptying Magazines, Cylinders, and Guns with Built-in(Blind) Magazines*

- **Built-In Magazines**

- Lever Action
- Pump/Slide Action
- Work the action until empty





# *Loading a gun*

## *Falling-Block Action*



# *Loading a gun*

## *Falling-Block Action*





# *Emptying Magazines, Cylinders, And Guns*

## *Falling-Block Action*





# *Loading a gun*

## *Box Magazines*

- Insert the magazine into the magazine well
- Pull on the magazine to ensure it is locked in place



# *Loading a gun*

## *Semi-Automatic Action*



# *Loading/Unloading & Malfunctions*

## *Semi-Automatic Action*





# *Emptying Magazines, Cylinders, And Guns*

## *Semi-Automatic Action*

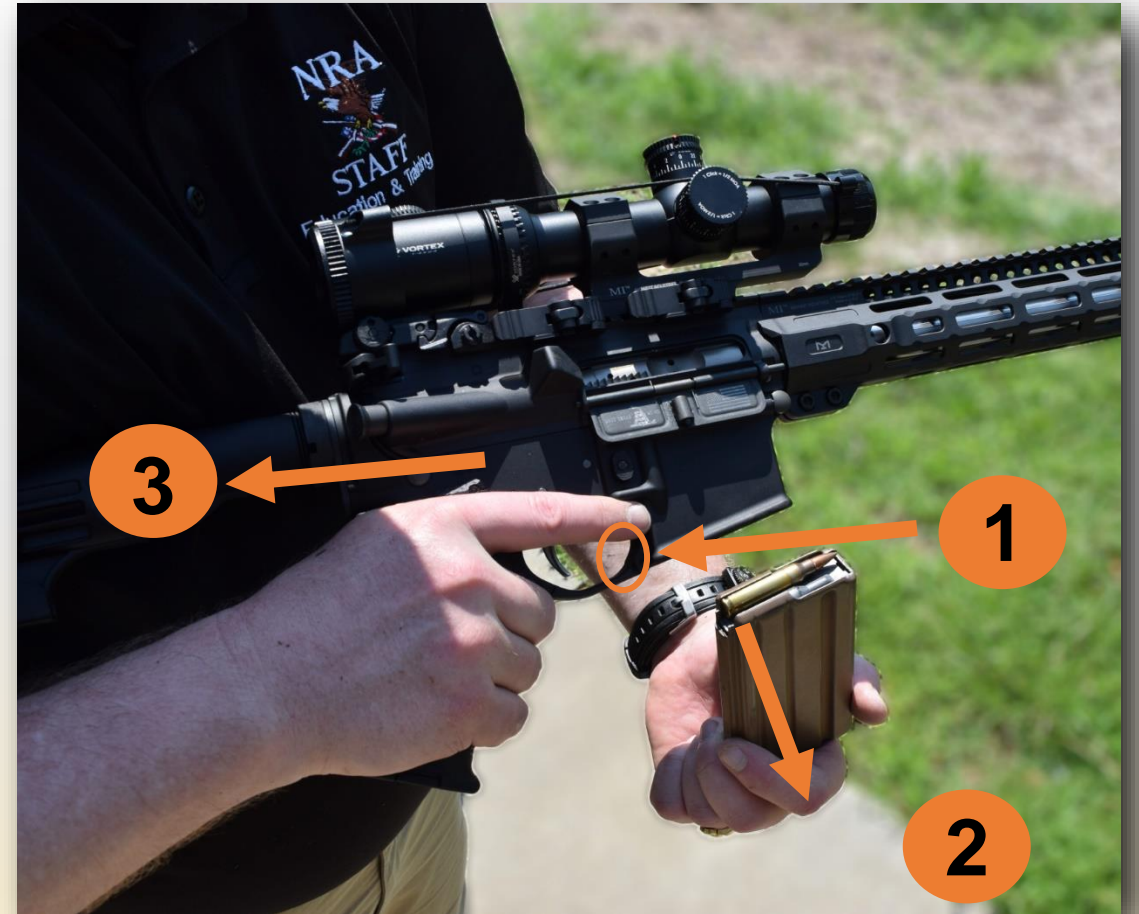


# Emptying Magazines, Cylinders, And Guns

## Removable Box magazines

- **Box Magazines**

- Press magazine release
- Pull magazine free of rifle
- Lock the bolt to the rear



# *Loading / Unloading* *(AK-47)*



# *Loading / Unloading* *(AK-47)*





# *Loading a gun*

## *Muzzleloading Guns*

- Check the bore for a load

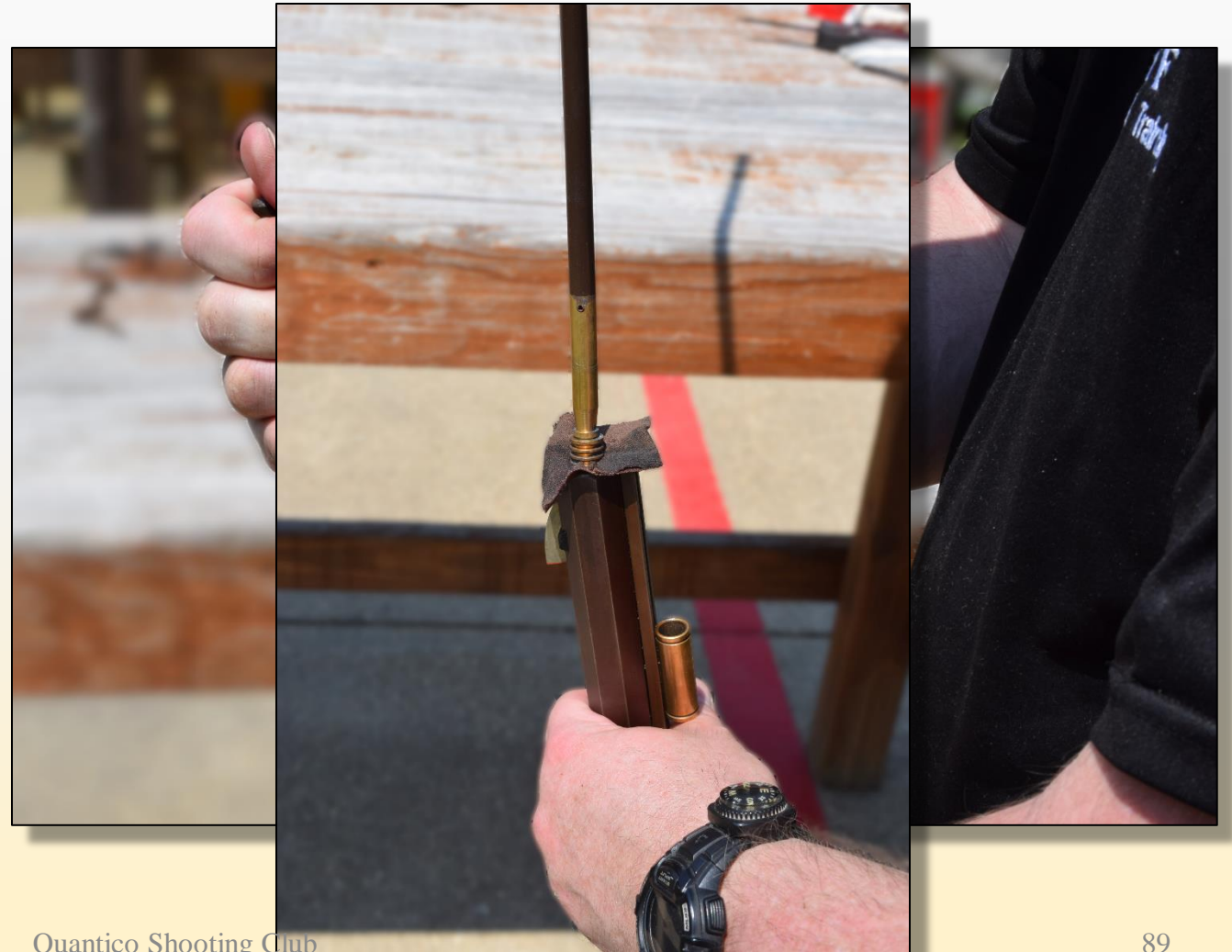


2. Half-cock and position the gun for loading.





3. Wipe and clear the barrel.



4. Measure the powder charge.



5. Charge the barrel with powder.



**Use Only Black Powder Or An Approved Substitute In Muzzleloading Firearms.**

### 6. Prepare the patch (lubricate).





### 7. Patch the ball.



8. "Start" the ball and patch.





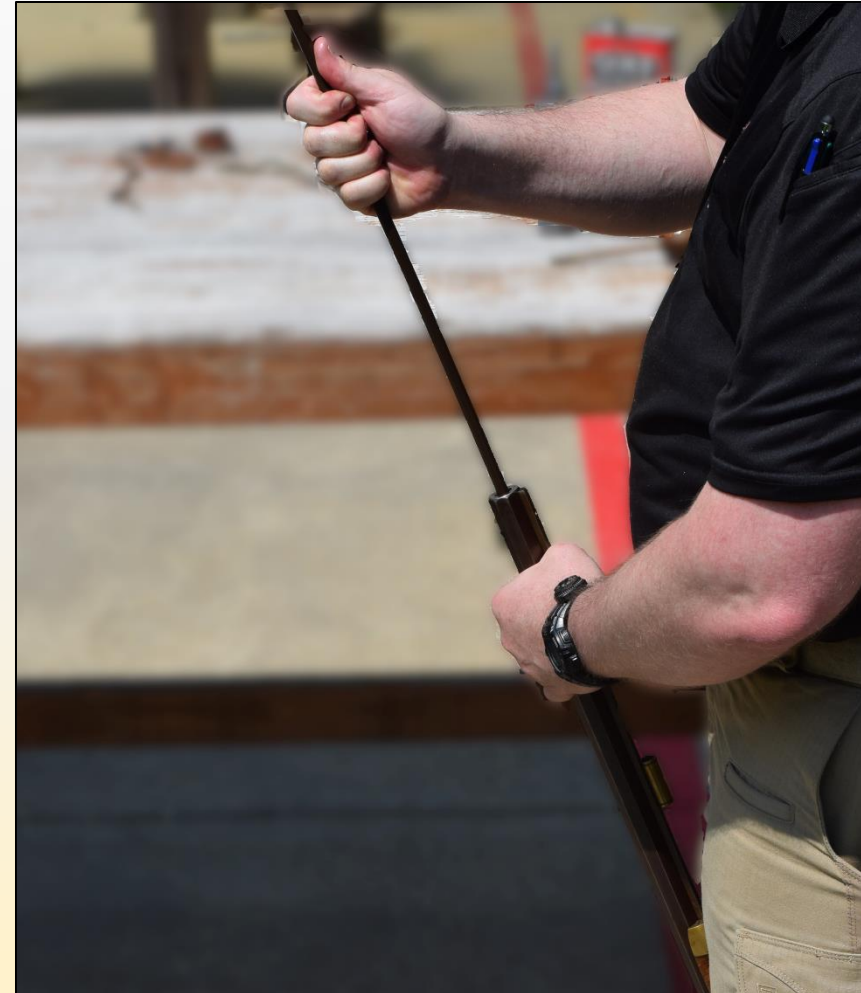
### 9. Trim the patch.



10. "Short start" the ball.



11. "Seat" the ball.





# *Muzzleloading Guns*

Shoot the ball.



# Unloading a Gun & Stoppages

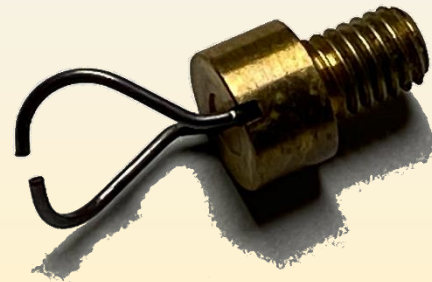
## Muzzleloading Guns



Ball Puller



CO2 Ball  
Discharger



Patch worm





# *Action Types You May Have To Clear*

- ***Rifles***
  - Bolt action
  - Lever action
  - Falling block action
  - Semi-Automatic action
- ***Pistols***
  - Single action
  - Double action
  - Semi-Automatic action
- ***Shotguns***
  - Break action
  - Pump action
  - Semi-Automatic action
  - Bolt action
- ***Muzzleloading guns (pistols, rifles and shotguns)***
  - Flintlocks
  - Percussion locks



# *Magazine Types You May Have to Clear / Remove*

- Built-in magazines
- Box magazines
- Tubular magazines
- Cylinders (Revolvers)



# *What Is A Stoppage ?*

***What is a stoppage?***



## **Cycle of operation (8 steps):**

- |               |               |
|---------------|---------------|
| 1. Feeding    | 5. Unlocking  |
| 2. Chambering | 6. Extracting |
| 3. Locking    | 7. Ejecting   |
| 4. Firing     | 8. Cocking    |



## *What Is A Stoppage ?*

- A stoppage is an unintentional interruption in the operational cycle of a gun, which stops the gun from operating properly
- Stoppages can be cleared quickly, which returns the gun back to operational condition
- **Examples of stoppages:**
  - The bolt fails to lock a cartridge into position
  - A stove-pipe in a semi-automatic pistol
  - Double-feed





# *Malfunctions*

## ***What is a Malfunction?***



# *What Is A Malfunction?*

- Failure of a gun or ammunition to function as designed or fire satisfactorily
- Two categories of malfunctions:
  - ***Gun Malfunction***
    - *Require the gun to be repaired/maintenance to make it function properly*
    - Example: A broken sear that causes the pistol to fire all rounds in the magazine
  - ***Ammunition malfunction***
    - Example: A misfire



# *Malfunctions*

- ***What should the shooter do?***

- Keep the gun pointed downrange and wait the required time
  - 60 seconds for modern cartridges
  - 2 minutes for muzzleloaders
- Clear the malfunction
- OR, Raise the non-shooting hand for assistance



# *Ammunition Malfunctions*

***What types of ammunition malfunctions are there?***



# *Types Of Cartridge Malfunctions*

- ***MISFIRE***
- ***HANGFIRE***
- ***SQUIB LOAD***
- ***OVER PRESSURE / RELOADING\****

\* Relevant to QSC Range Operations





# *Ammunition Malfunctions*

## *Misfire*

### ***What is a Misfire?***



# Misfires

- A **MISFIRE** is the failure of a cartridge to ignite when the primer or case rim is struck by the firing pin
  - What are some causes?
    - Defect In The Cartridge
    - Defect In The Firearm



# Misfires

- ***What should the shooter do?***
  - ***STOP FIRING IMMEDIATELY!!***
    - Keep the gun pointed downrange and wait the required time
      - 60 seconds for cartridges
      - 2 minutes for muzzleloaders
    - Clear the malfunction
      - Safely open the action
      - Check the bore for obstructions
  - Raise the non-shooting hand for assistance



# *Ammunition Malfunctions*

## *Hangfire*

### ***What is a Hangfire?***



# *Hangfire*

- A HANGFIRE is a perceptible delay in the ignition of a cartridge after the primer or case rim has been struck by the firing pin. This delay may last several seconds
  - *When a cartridge fails to fire immediately, it will not be known if the problem is a misfire or hangfire. Because a hangfire condition can cause the firearm to fire after a substantial delay, the firearm should be kept pointed in a safe direction for at least 60 seconds before the action is opened to remove the cartridge*





# *Ammunition Malfunctions*

## *Squib Load*

### ***What is a Squib Load?***

- A ***Squib Load*** is a shell developing less than normal pressure or velocity upon ignition of the cartridge. A squib load can cause a projectile or wad (for shotguns) to fail to exit the muzzle and lodge in the bore of the barrel
- ***Signs of a Squib Load:***
  - Reduced Noise
  - Reduced Muzzle Flash
  - Reduced Recoil
- ***What Happens When You Shoot after a Squib load?***





# *Ammunition Malfunctions*

## *Squib Load*

### ***What is Over Pressure / Reloading?***



# *Clear A Stoppage*

- ***What do we need to know in order to clear a stoppage?***
  - The parts of the gun
  - How to SAFELY operate the gun
    - Loading
    - Firing
    - Unloading

# Clear A Stoppage (Stovepipe)



1. Remove the source of the ammunition
2. Lock the slide to the rear
3. Remove the casing/cartridge



# Clear A Stoppage (Double Feed)





# Clear A Stoppage (Double Feed)



1. Lock the slide to the rear
2. Remove the source of the ammunition
3. Remove the casing/cartridge



# *How To Take Control Of A Loaded Gun*

- **To take control of a loaded gun from a shooter, the RSO should approach from the side in which:**
  - Will provide the most control; announce presence to the shooter and ask shooter the nature of the problem
  - Grasp the barrel of the gun (*Be VERY careful, the barrel may be hot!*) behind muzzle and control the direction of the muzzle (*Safe Gun Handling Rule #1*), gain control of the gun, and have the shooter step back
  - Control and reposition the gun if necessary (keep muzzle pointed in a safe direction)
  - Determine the stoppage, clear it, and unload the gun
  - Tell the shooter what went wrong and how to prevent it from happening again



# *Overpressure / Reloading*

- **Overpressure and reloading** refers to members who are firing their constructed rounds, e.g., reloaded. Less or no skilled people, trying to economize, and not knowing the procedures/intricacies required to make a safe round are simply a danger to themselves and others.
- **Some Common Symptoms – If You Encounter These, You need to Stop the Shooter and Inquire:**
  - Blown primers – Indicates excessive pressure
  - Cases stuck in chamber – Indicates excessive pressure
  - Bolt stuck closed – Indicates excessive pressure
  - Bolt won't close on round – Indicates the round was loaded too long and will cause overpressure
  - Ejector marks on the case head – Indicates excessive pressure pushing the round back into the ejector
  - Cracked brass or case head separation – Indicates excessive pressure or brass reloaded too many times
  - Magazine blown out of rifle – Indicates excessive pressure
- **Some Common Causes – Individually or in Combination:**
  - Too high a powder charge for the caliber or bullet weight OR using a faster burning powder that raises pressure to fast
  - Bullet loaded too long and / or jammed into the barrel's rifling – Creates additional pressure
  - Too heavy a bullet for powder charge – Safe for a 168gr bullet but unsafe for a 190gr bullet with same charge
  - Loading for a low ambient temp and shooting at a higher temp day - Produces more pressure
  - Gun fires out-of-battery – Bolt / slide is still open but gun fires





# Overpressure / Reloading

- **Signs of Excessive Pressure**

- Blown Primers
- Flattened / Pierced Primers
- Primer Flow
- Ejector Swipe
- Case Head Separation

- **Not Shown but Indicators**

- Bolt won't close – Loaded too long
- Bolt won't open – Case stuck



AMU 600 yard brass.  
Example over pressure loads





# Overpressure / Reloading

- *Results – Which One Happened at QSC?*





# *Range Operations*

## ***Lessons Learned***





# Range Operations – Lessons Learned

- **Some Lessons that May Not be in the SOPs but Learned Over Time and Through Experience**
  - There is no concealed carry on MCBQ except for active federal LEOs – Federal rules – Violation is a **Felony** offense\*\*\*
  - Clearing the Range – Call RC and ask for an inspection so QSC is not blamed for range trash from other agencies
  - NFA weapons and suppressors are allowed – However, no automatic fire or simulated auto fire – Per MCBQ
  - No binary triggers or bump stocks per MCBQ
  - Rec Fire – Ensure you call in new arriving shooter DODICS for clearance - If RC finds we are shooting a non-approved DODIC it's trouble
  - Don't argue with the Fire Desk staff – Even if you know there may be an error (338 Lapua Okay but 300WM Not) they are in control
  - Always request an occupy time before entering a range so the Fire Desk can deconflict access in RFMSS
  - There is generally no driving on the ranges



# *Range Operations – Lessons Learned*

- **Range 1:**

- PWS operates a 300m range and the range flag is always up as the range is always considered Hot. You may have to coordinate through the OOD when transiting Gate 1 to ensure you do not enter a HOT SDZ
- No drawing from the holster when in the covered pavilion – A ricochet off the concrete could be a fatal event
- Do not allow people to exit the Port-a-John to the left and in front of the firing line – they have to exit to the right and rear to re-enter through the door for their safety
- Make sure you place the Orange Safety Cone when people are downrange to remind you there could be people placing targets as there is undulating terrain and a deep defilade that hides their presence



# *Range Operations – Lessons Learned*

- **Range 2 & 3:**

- Ensure you maintain coordination between adjacent ranges so you do not end up shooting behind others or going into the pits when other ranges are firing
- There is a tunnel between the ranges to enter the pits, this is the safest way to enter and exit the pits for these ranges
- The ranges are usually reserved for CMP Rifle Team practice or matches so they are not always used – This could breed complacency – Always update yourself on the SOPs

- **Range 4:**

- Maintain observation of the entire line to the berm for wildlife and rouge runners who will cross the barriers and disregard the ranges flags at Checkpoints 8 & 9 to continue their route – Call a Cease Fire – Remember to not shoot anything that is moving!
- Ensure you maintain coordination with Range 3 so you do not go on the berm or in the pits when they are firing. If you do, the overhead concrete roof structure is the safe haven



# *Range Operations – Lessons Learned*

- **SAT Range:**

- Ensure you deconflict firing schedule with Ironman Range if they are also shooting to include what Bays are active
  - If Bay 4 is active, shooters on Ironman cannot occupy Lanes 1 & 2
- No vehicles inside SAT except for OIC, RSO, Match Director or EMT
- As a reminder, some shooters will want to practice with steel and a PCC – Ensure you follow the minimum safe distances for steel by caliber requirements

- **Ironman Range:**

- Ensure you deconflict firing schedule with SAT Range if they are also shooting to include what Bays are active
  - If any SAT Range Bays are Hot, NO Downrange movement is allowed on ironman Range
  - If Bay 4 is active, shooters on Ironman cannot occupy Lanes 1 & 2
- Shooters can use the driving lanes to go downrange to place targets
- Ensure all shooters have cleared downrange before going Hot as there are small berms and undulating terrain that could hide people



# *Loading/Unloading & Malfunctions*

## ***Practical Exercise***





***Questions?***

***Make certain you signed in to get credit for this instruction!***