UNITED STATES MARINE CORPS

FIELD MEDICAL TRAINING BATTALION
Camp Lejeune, NC 28542-0042

FMST 108

Demonstrate Rifle Marksmanship Skills

TERMINAL LEARNING OBJECTIVE.

1. Given a service rifle, sling, a filled magazine, cartridge belt, magazine pouch, dummy ammunition and a scenario where the service rifle has stopped firing, perform corrective action to return the weapon to service. (HSS-MCCS- 1006)

2. Given a service rifle with primary aiming device, individual field equipment, sling, magazines, cleaning gear, ammunition, and a target, zero the weapon to achieve 3 out of 5 shots within a 4 minute of angle group at a specific range. (HSS-MCCS-1008)

3. Given a service rifle with primary aiming device, individual field equipment, sling, magazines, ammunition, and threat targets at short, mid and long range, demonstrate Basic Combat Rifle Marksmanship to strike the target without any safety violations during execution of Combat Marksmanship Table 2. (HSS-MCCS-1010)

ENABLING LEARNING OBJECTIVES.

1. Given a service rifle, sling, a filled magazine, cartridge belt, magazine pouch, dummy ammunition and a scenario where the service rifle has stopped firing, **perform corrective action for a stoppage or malfunction** in accordance with MCRP8-10B.2. (HSS-MCCS-1006a)

2. Without the aid of reference, **identify the characteristics of a Rifle Combat Optic (RCO)**, within 80% accuracy, and in accordance with TM 11064-OR/1. (HSS-MCCS-1008a)

3. Without the aid of reference, **identify the nomenclature of a Rifle Combat Optic (RCO)**, within 80% accuracy, and in accordance with TM 11064-OR/1. (HSS-MCCS-1008b)

4. Without the aid of reference, **maintain the RCO so that it is clean and serviceable** and in accordance with TM 11064-OR/1. (HSS-MCCS-1008c)

5. Given a service rifle, Rifle Combat Optic (RCO), sling, magazines, individual combat equipment, and a target, **perform zeroing procedures to achieve Point of aim (POA)/Point of impact (POI)**, in accordance with MCRP 3-01A/ (HSS-MCCS-1008d)

6. Given a service rifle, individual field equipment, sling, magazines, ammunition, and known distance targets, **compress the fundamentals of marksmanship to strike the target without any safety violations**. (HSS-MCCS-1010a)

1. **COMPRESSING THE FUNDAMENTALS**. While the fundamentals of marksmanship are applied in all shooting scenarios, the speed of their application is increased in combat to quickly and effectively engage targets from various locations and distances. In combat, the fundamentals of marksmanship must be applied in the shortest period of time possible while still achieving accurate target engagement. There is no room for error or hesitation. The time required is unique to each individual and his own capabilities.

a. The ultimate goal in quick engagement is to achieve sight alignment and sight picture simultaneously, and to fire the shot at the moment sight alignment and sight picture are acquired.

b. Executing your shots at a rapid but effective rate can be achieved only through practice and experience. Eventually, you can become so skilled that you are not even conscious of the separate steps you take to fire your shot.

c. You must know your abilities. Fire only as quickly as you are capable of firing accurately. Do not exceed your shooting skills in an effort to get rounds quickly on target. Chances are those rounds will be ineffective. In combat, you might not have a second chance. NEVER fire with the weapon on Burst. There is no way to manage the recoil to maintain accuracy beyond the first of the three rounds. Using Burst is a waste of ammunition.

2. **APPLICATION OF COMBAT MARKSMANSHIP FUNDAMENTALS**.

a. **Aiming**.

(1) Sight Alignment/Sight Picture – in combat, the fundamentals are applied simultaneously in a compressed time so sight alignment and sight picture are achieved as the shot is fired. Although the target must be quickly engaged in combat, sight alignment is still the first priority.

(2) Sight Alignment and Distance to the Target – during combat, the fundamentals of marksmanship must be applied in a time frame consistent with the size and distance to the target. As the distance to the target increases, sight alignment becomes more critical for

accurate target engagement.

(3) Long-range Engagements – at greater distances (i.e., over 100 yards), correct sight alignment and sight picture are essential for accurate target engagement and should not be compromised.

(a) As the distance to the target increases, the front sight post covers more of the target. Since you must see the target to engage it, there is a tendency to lower the tip of the front sight post to acquire the target because it is natural to aim at what you can see. This will cause your rounds to impact low on the target or even to miss the target.

(b) You must make a conscious effort to aim center mass.

(4) Short-range Engagements – proper sight alignment is always your goal. However, as the distance to the target decreases (i.e., 100 yards or less), perfect sight alignment is not as critical to delivering effective shots on the target.

(a) At very short ranges, a deviation in sight alignment can still produce accurate results as long as the tip of the front sight post is in the rear sight aperture and on the target.

(b) A mental adjustment must be made to place the aligned sights on the target, creating an acceptable sight picture as the trigger is pulled. Time, distance to the target, and personal ability will dictate what this acceptable sight picture is. Each individual must define an acceptable sight picture within his own capability. As you become more proficient, your sight picture will become more precise to center mass.

b. **Weapons Presentation as an Aid to Achieving Sight Alignment/Sight Picture**.

(1) Presentation should help you achieve proper and consistent stock weld and eye relief. This will aid in getting sight alignment quickly. Do not move your head down to meet the stock of the weapon. Hold your head as

erect as possible to allow the aiming eye to see directly through the sights.

(2) If the butt of the rifle is placed correctly and stock weld is correct, you should be looking through the rear sight as your rifle is presented. As the rifle levels, pick up the front sight and establish sight alignment and sight picture. With practice, this becomes so automatic that it requires minimal effort to align the sights.

(3) In combat, you will be looking at the target as you are presenting your rifle. As the rifle settles, shift your focus back to the sights to place the tip of the front sight post on the target and obtain sight picture. As you become more skilled through practice, sight alignment and sight picture will appear to come together simultaneously.

c. **'0-2' Rear Sight Aperture**. The '0-2' rear sight aperture is designed for close range engagements under 200 meters and at night.

(1) The '0-2' sight has a larger aperture for rapid acquisition of targets because it allows for a wider field of view. Therefore, the aperture can make aligning the sights more difficult due to its larger size. However, at very close ranges, sight alignment is not as critical to accuracy.

(2) Flipping the larger '0-2' aperture up will automatically give a zero at 200 yards when the elevation knob is set on the 300-yard setting (8/3).

c. **Breath Control**. In combat, your breathing and heart rate will often be increased due to physical exertion (e.g., running) or the stress of battle. Therefore, you must interrupt your breathing cycle to create a pause (i.e., hold the breath) that is long enough to fire a shot.

d. **Trigger Control**. When a combat target appears, it must be engaged as quickly as you can accurately fire. You must stay within your capabilities and strike a balance between speed and accuracy to deliver well-aimed shots on target. Firing quickly but inaccurately is ineffective and will give the enemy time to respond with his own fire. The goal in combat is uninterrupted trigger control. You must

be aggressive in applying uninterrupted trigger control. Trigger control in combat is achieved by the following:

(1) Maintain a firm grip on the weapon to increase stability and counter the effects of recoil. Even with a tighter grip, the trigger finger must be able to operate independently from the gripping hand so the trigger can be moved straight to the rear without disturbing sight alignment.

(2) As presentation of the weapon begins, the safety is disengaged and the trigger finger begins moving toward the trigger.

(3) When the trigger finger contacts the trigger, slight pressure may be applied.

(4) As soon as the sight picture is achieved, the trigger is moved to the rear in one continuous movement, taking care not to disturb sight alignment.

e. **Follow-Through/Recovery**. In fundamental marksmanship training, you practiced follow-through to avoid altering the direction of the round by keeping your rifle as still as possible until the round exited the barrel. In combat, recovery is important to get the rifle sights back on the target for another shot. Recovery starts immediately after the round leaves the barrel. Applying a consistent amount of muscular tension within the position throughout the shot process will allow you to automatically recover the sights back on target. Applying recovery techniques ensures the sights are on target as quickly as possible to fire another shot.

3. **THE CHARACTERISTICS OF A RIFLE COMBAT OPTIC (RCO)**

The Service rifle is defined as a M16A4 rifle or M4 carbine equipped with an RCO. The primary sight for the Service rifle is the RCO.

The RCO (also known as the ACOG) is a day and night dual source illuminated telescopic sight with a tritium illuminated reticle pattern designed for the M-16 family of weapons.The RCO system uses fiber optics to provide a low light and night aiming capability and eliminates the need for batteries. The RCO incorporates Tritium Lamp lights in order to illuminate the reticle pattern present in the optic.

It is calibrated to accommodate for bullet drop when a round is fired which eliminates the need for adjustments once the system is zeroed with the weapon. It is a four power optic. The USMC fielded the RCO in order to give its Marines the ability identify and accurately engage targets out to 800 meters.

- Rifle mounted aiming system
- Length 5.8 inches
- Weight 15.3 ounces
- Magnification 4 times
- Objective Aperture 32mm
- Eye Relief (Distance from the eye to the eye piece) 1.5 inches for optimal picture
- Exit Pupil (Size in diameter of the eyepiece you look through) 8mm wide
- Allows for rapid target acquisition
- Allows for considerable eye latitude
- Field of View 7.0 degrees at 100m (12.7m across)
- Chevron Width 19 inches at 300m
- 19 inches is the average width across a person's chest.

Benefits of using the RCO

- Allows individual to quickly estimate range of targets.
- Acquire partially camouflaged targets at ranges beyond 300 meters.
- Allows individual to see into and through shadows, windows and foliage.
- Acquire targets in low light conditions.
- ID enemy vs. non-combatant vs. friendly.
- Reduce potential for fratricide.
- Enhance combat exchange ratio in our favor.
- Allows for accurate fire support.
- Reduce ammo expenditure.

4. **NOMENCLATURE OF A RIFLE COMBAT OPTIC (RCO)**

a. **The TA31RCO (AN/PVQ-31B).** The RCO/ provides the shooter with quick target acquisition at close combat ranges while providing enhanced target identification and

hit probability out to 800 meters utilizing the Bullet Drop Compensator (BDC). The optic incorporates dual-illumination technology using a combination of fiber optics and self-luminous Tritium. This allows the aiming point to always be illuminated without the use of batteries. The Tritium illuminates the aiming point in low light conditions, and the fiber-optic self adjusts reticle brightness during daylight according to ambient light conditions. This allows the operator to keep both eyes open while engaging targets and maintaining maximum situational awareness.

b. **Nomenclature**.

(1) The **elevation adjuster** is located on top of the RCO. It is used for adjusting the elevation.

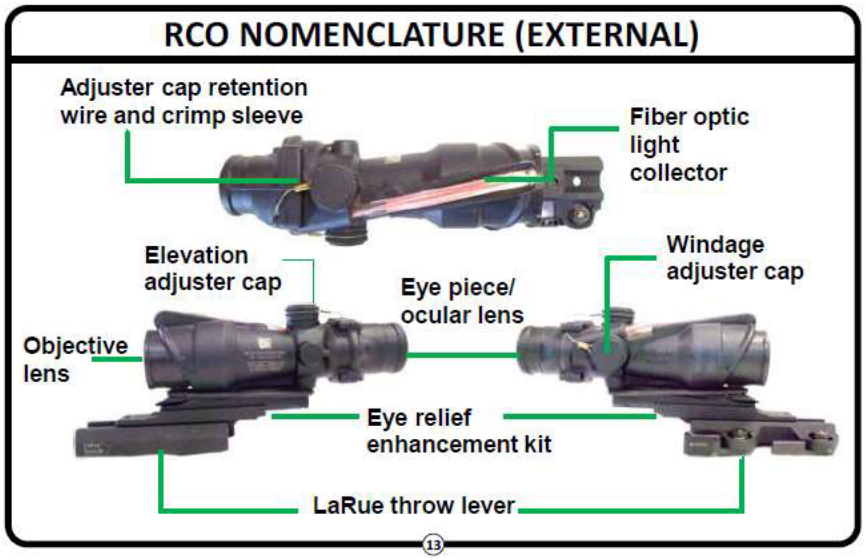
(2) The **eye piece** is located at the back of the RCO. It is used for magnification and protection of the RCO.

(3) The **fiber optic light collector** is located forward of the elevation adjuster on top of the RCO and is used for gathering light for the RCO.

(4) The **roof prism** is located inside the RCO in between the eye lenses and the elevation adjuster. It is used for reflecting the image off of the objective lens, to the eye lenses, to the human eye.

(5) The **windage adjuster** is located on the right side of the RCO as you are looking through the eye lenses. It is used for adjusting right and left.

(6) The **objective lens** is located in the front of the RCO. It is used for magnifying and protection.



5. **MAINTAIN THE RCO SO THAT IT IS CLEAN AND SERVICEABLE**

a. Cleaners should not be used on the RCO.

(1) Use a paint brush to clean off and dirt or dust on the RCO

(2) Use a soft lens wipe to clean off the optic

6. **PERFORM ZEROING PROCEDURES TO ACHIEVE POINT OF AIM (POA)/POINT OF IMPACT (POI)**

A zero is the elevation and windage settings required to place a single shot, or the center of a shot group, in a pre-designated location on a target at 100 yards/meters, from a specific firing position, under ideal weather conditions (i.e., no wind).

Zeroing the RCO is conducted at 100 meters/yards. A zero is not established by simply getting a pre-zero sight setting. A zero established at 33 meters/36 yards is not nearly as accurate as a zero established at 100 meters. To zero the RCO:

- Place a suitable target with an aiming point 4 inches in diameter contrasting with the background (e.g., ‘5V’ ring of an ‘A’ target) at a range of 100 meters and determine an aiming point. Use the 100-meter aim point on the reticle: Tip of the chevron center mass on the target.
- Fire five rounds to obtain a shot group.

-Triangulate the shot group to identify the center.

-Determine the vertical and horizontal distance in inches from the center of the shot group to the center of the target.

- Adjust the reticle to move the center of the shot group to the desired point of impact. 3 clicks move the strike of the round 1 inch at 100 meters for both windage and elevation.
- Fire five rounds to obtain a shot group.
- Adjust the reticle to move the center of the shot group to the desired point of impact.
- Fire five rounds to confirm the zero. The rifle is considered zeroed when a shot group is inside the 4-inch aiming area of the target.
- Record zero in data book.

FACTORS AFFECTING A ZERO

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a. **Factors Affecting an Accurate Zero**. There are several factors that can affect your ability to place accurate fire on a target, as well as maintain an accurate and stable zero. Anything the shooter changes from shot to shot affects the zero on their RCO. These are some of the common factors that, when applied inconsistently, affect your ability to maintain the accuracy of your zero:

- Placement of support hand

- Placement of the rifle buttstock in the pocket of the shoulder
- Grip of the firing hand
- Firing-side elbow
- Stock weld
- Eye relief
- Sight picture
- Muscular control
- Breathing
- Trigger control
- Sling tension

REFERENCE(S)

Marine Corps Combat Marksmanship Program MCO 3574.2K
Rifle Marksmanship MCRP 8-10B.2