

# USMC Range Safety Pocket Guide

OIC/RSO Extract

Version 1.1

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**This portable guide provides references to MCO 3570.1\_. It is not intended for use as a sole source of information for the MCO 3570.1\_. For further information, consult the full versions of MCO 3570.1\_.**

**Version 1.1 of this guide removes SMAW DODICs HX05/HX07 from the munition tables, updates the fire and maneuver offset to 10 degrees, and adds information regarding minimum target engagement distances while using steel reactive targets.**

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Weapon System	OIC <sup>1</sup>			RSO <sup>1</sup>		
	OFF	WO	NCO	OFF	WO	NCO
Practice hand grenades; 40mm practice, illum and signaling; sub-caliber training devices; laser devices; firing devices; simulators; trip flares; non-lethal munitions; small arms and machineguns	X	X	E-6	X	X	E-5
Chemical agents <sup>2</sup> , riot control <sup>2</sup> , and smokes	X	X	E-6 <sup>2</sup>	X	X	E-5 <sup>2</sup>
Aerial gunnery and air defense weapons; live grenades, grenade launchers, and grenade machineguns; live mines and demolitions; tank and fighting vehicle cannons	X	X	E-7	X	X	E-6
Field Artillery <sup>3</sup>	X	X	E-7 <sup>3</sup>	X	X	E-6 <sup>3</sup>
Mortars <sup>4</sup>	X	X	E-6	X	X	E-6 <sup>4</sup>
Air defense artillery rockets and guided missiles <sup>5</sup>	X	X	E-7	X	X	E-6
Direct-fire antitank rockets and missiles	X	X	E-7	X	X	E-6
Live-fire exercises using organic weapons, squad through company, battery, troop <sup>6</sup>	X	X	E-7 <sup>6</sup>	X	X	E-6 <sup>6</sup>
CALFEX/CAX using outside fire support, troop, battery, squad, platoon, company; or battalion and larger <sup>7</sup>	X	X	E-7 <sup>7</sup>	X	X	E-6 <sup>7</sup>

Notes:

<sup>1</sup> Civilians in the grade of General Schedule (GS)-07 and above, or equivalent, may act as OIC; GS-05 and above, or equivalent, may act as RSO.

<sup>2</sup> For the Marine Corps, OIC or RSO must be E-4 and above and be chemical, biological, radiological, and nuclear (CBRN) MOS 5702/5769/5711 when conducting CBRN or smoke training. For the Army, OIC and RSO must be CBRN qualified when conducting CBRN or smoke training.

<sup>3</sup> Use of E-7s as OICs is authorized only when approved by the senior commander (Army)/installation commander (Marine Corps). Duties of the RSO are normally performed by either the battery executive officer or the platoon leader.

<sup>4</sup> RSO for Marine Corps can be an E-5 for mortar training activities.

<sup>5</sup> Senior Range Safety Officer (SRSO) will be a chief warrant officer four or higher, or a civilian in the grade of GS-12 or above.

<sup>6</sup> For the Army when conducting maneuver or shoot house training using force on force training ammunition (UTM or CCMCK) only, OIC will be E-6 or above and RSO will be E-5 or above.

<sup>7</sup> For battalion or larger CALFEX/CAX, OIC will be a field grade commissioned officer, exercise RSO will be E-7 or above.

Steel Reactive Target Minimum Engagement Distances	
Pistols	7 meters
Shotguns	10 meters w/ 00 Buckshot. 45 meters w/ slugs
5.56mm	23 meters w/soft core ammo. 69 meters w/penetrators
7.62mm	150 meters
.300/.338/.50	375 meters

### Common munitions and dimensions<sup>1</sup>

Caliber and nomenclature	Dist. X (m)	Dist. W <sup>2</sup> (m)	MTE <sup>3</sup> (m)	Area A (m)	Area B (m)	Vertical Hazard <sup>4</sup> (m)
9mm M882	1,800	399	N/A	N/A	N/A	253
5.56mm M855 Ball	2,958	215	N/A	N/A	N/A	158
5.56mm M856 Tracer	3,100	355	N/A	N/A	N/A	355
5.56mm M855A1 EPR	3,521	400	N/A	N/A	N/A	295
5.56mm M856A1 EPR Tracer	2,574	210	N/A	N/A	N/A	171
7.62mm M118 LR	5,288	1,545	N/A	N/A	N/A	752
7.62mm M80 Ball	3,662	315	N/A	N/A	N/A	271
7.62mm M62 Tracer	4,501	341	N/A	N/A	N/A	256
7.62mm M80A1 EPR	3,951	650	N/A	N/A	N/A	473
7.62mm M62A1 EPR Tracer	3,298	625	N/A	N/A	N/A	510
.300 Win Magnum MK 248 Mod 0	5,919	390	N/A	N/A	N/A	322
.300 Win Magnum MK 248 Mod 1	6,294	390	N/A	N/A	N/A	350
.300 Norma Magnum XM1163	5,553	390	N/A	N/A	N/A	329
.338 Norma Magnum XM1162 AP	5,839	1,175	N/A	N/A	N/A	1,107
.338 Lapua Magnum MK 330	6,833	220	N/A	N/A	N/A	329
.50 cal M2 AP	6,100	1,659	N/A	N/A	N/A	904
.50 cal M2 Ball	6,500	1,652	N/A	N/A	N/A	901
40mm M433 HEDP	470	N/A	165	165	165	216
40mm M781/M407A1 TP	470	N/A	75	N/A	N/A	216
40mm M383 HE	2,095	471	310	310	310	781
40mm M385A1 TP	1,984	471	N/A	N/A	N/A	471
40mm M430 HEDP	2,037	471	310	310	310	781
40mm M918 TP	2,095	471	N/A	N/A	N/A	471
LAAW 66mm HEAT M72A2	1,000	N/A	75	250	250	950
LAAW 66mm HEAT M72A4, 5, 6, 7, 9	1,400	N/A	75	250	250	950
84mm MAAWS HE (441D RS)	2,600	N/A	250	400	400	950
MAAWS HEAT (551 IM, 551C RS)	3,200	N/A	85	150	150	950
MAAWS HEDP (502 RS)	2,000	N/A	50	330	330	950
MAAWS TP (552)	3,200	N/A	85	100	100	580
MAAWS 7.62mm Sub Cal	4,100	N/A	N/A	100	N/A	380
AT4 HEAT M136	2,100	N/A	50	227	488	500
AT4 9mm Trainer M939	1,600	N/A	N/A	N/A	N/A	500
SMAW-HEAA HX06	2,460	N/A	100	250	250	950
Javelin FGM-148 HEAT	6,100	N/A	600	600-500	500	660
Javelin FGM-148E Inert	6,100	N/A	600	600-200	200	660

**Notes:**

1. All values are for an altitude of 0 feet
2. All Distance W values are worst case of Earth and Armor impact media
3. Minimum Target Engagement Distance
4. All Vertical Hazard values are worst case of Earth and Armor impact media

## OIC / RSO Checklists

### Before firing tasks/briefs

- Read SOP, local range regs, and local safety brief.
- Assign and brief ARSOs, corpsman, safety driver, and other support.
- Conduct Safety Brief, example provided on page 3 and 4.
- Ensure all range flags are up and, red lights are set if necessary.
- Ensure gates are secured or manned.
- Road guards briefed and (if necessary) placed in pairs.
- Establish communication with range control per local SOP.
- Ensure the range is laid out correctly:
  - Range perimeters are within the SDZ.
  - ARSOs know L/R lateral limits and their sector.
  - Target line and Firing lines are in correct location; spot check.
  - Ensure all targets are set up using proper materials.
  - Ammo issue point, NCO, and first aid kit are in the correct location.
- Brief the ammo NCO: \_\_\_\_\_ will be the ammo NCO. He/she will break ammo down into \_\_\_\_\_ piles of \_\_\_\_\_ rounds, for the appropriate relay/shooter. **Be cautious of excessive breakout.**
- Conduct a complete safety check and prepare weapons for firing. **Ensure that all extra weapons are cleared!**
- Ensure LASER devices are correctly configured for approved activity.
- Shooter Briefs
  - Count off and assign relays/targets if necessary.
  - Brief the course of fire, conduct of fire, drills, and scoring system.
  - Ensure shooters know and understand all weapon conditions.
  - Ensure shooters know and understand all misfire, immediate and remedial actions for their weapons.

### During firing tasks

- Ensure that shooters are wearing ear protection and proper PPE.
- Follow the course of fire. Do not deviate.
- Check for errors, corrections, and **safety**. Ensure that proper checks are conducted and correct coaching techniques are used.
- Conduct radio checks.
- Continually check range impact area to ensure it is clear of all personnel and equipment. Be sure to check for low-flying aircraft and helicopters.

### After-firing tasks

- Unload, show-clear. Do not forget about extra weapons.
- Police call.
- Break down range, targets, and bring in road guards.
- Take down range flags and return range property.
- All ammunition dunnage is separated and taken \_\_\_\_\_.
- Shakedown of all personnel (including gear) will take place to ensure 100% accountability of ammunition. Note: Expenditure reports for ammunition will be filled out after the shakedown.
- Report all personnel trained, ammunition expended, by type, to Range Control. Request range inspection.
- Ensure 100% accountability of all personnel and equipment before leaving the range.

## Example Range Safety Brief

**THIS EXAMPLE BRIEF IS NOT INTENDED TO COVER ALL LIVE FIRE SCENARIOS OR WEAPON SYSTEMS. AS THE OFFICER IN CHARGE AND RANGE SAFETY OFFICER YOU MUST ENSURE THAT YOU BRIEF ALL ASPECTS OF RANGE SAFETY PERTINENT TO YOUR SPECIFIC RANGE.**

- a. Safety is paramount. **Safety will always be priority NUMBER ONE.**
- b. This is your range \_\_\_\_\_ safety brief.
- c. The Officer in Charge (OIC) is \_\_\_\_\_.
- d. The Range Safety Officer (RSO) is \_\_\_\_\_. The Laser Range Safety Officer (LRSO) (if applicable) is \_\_\_\_\_. The Assistant Range Safety Officer(s) (ARSO) (if applicable) are \_\_\_\_\_.
- e. The uniform for this range is \_\_\_\_\_. You will be wearing PPE level (0, 1, 2, 3) which includes \_\_\_\_\_.
- f. The four weapons safety rules are:
  - (1) Treat every weapon as if it were loaded.
  - (2) Never point your weapon at anything you do not intend to shoot.
  - (3) Keep your finger straight and off the trigger until you are ready to fire.
  - (4) Keep your weapon on "safe" until you intend to fire.
- g. No movement on the range will be permitted before informing the RSO. All road guards will be briefed and placed by the RSO only. Anyone departing or entering the range will notify the RSO before doing so.
- h. Everybody is a safety officer. If you observe a situation that you feel is unsafe, call an immediate **cease-fire** (check fire for mortars) or **stop** (for individuals, Javelins, SMAWs, blasting caps). A cease-fire must be given verbally and physically by giving the hand-and-arm signal to cease fire. In the case of a cease-fire, all weapons will go to Condition 4. Do not wait to be told. OIC/RSOs will check the back blast area to ensure it is properly cleared.
- i. During firing, the OIC will be located \_\_\_\_\_ and the RSO will be located \_\_\_\_\_. The corpsman/medic is \_\_\_\_\_ and will be located \_\_\_\_\_. The first aid kit is located \_\_\_\_\_. The dedicated safety vehicle is \_\_\_\_\_ and located \_\_\_\_\_. Vehicle keys (if applicable) are located \_\_\_\_\_.
- j. MEDEVAC will be handled by the safety corpsman and the OIC or RSO in conjunction with Range Control. All other personnel will stay clear of the emergency. (Go over trip map/routes to hospital or nearest LZ.) Muster at the assembly area for accountability.
- k. Observe the downrange area. Your left limit is \_\_\_\_\_, your right limit is \_\_\_\_\_. Your internal limits are the left and right of your targets. Your limit of advance is \_\_\_\_\_. All of your rounds will impact within these limits. You will fire on your designated targets only. Muzzles will be pointed in a safe direction at all times. No cross-range firing.
- l. There (will be/will not be) maneuvering on this range. If a Marine/Soldier is within 10 degrees of your muzzle, **DO NOT FIRE**. Be aware of your position and the Marines/Soldiers around your position. If you are in doubt of the situation, **DO NOT FIRE**.
- m. Overhead fire (is/is not) authorized for this range. The overhead firing procedures for this range are as follows: \_\_\_\_\_.

- n. The weapons to be used on this range are \_\_\_\_\_. (Demonstrate corrective action for each weapon system)
- o. If you should encounter a stoppage, apply immediate and/or remedial action and complete the drill. Continue with the drill until you hear the command to cease-fire, at which point you will comply unless told to do otherwise by a safety officer. (If you should hear or feel an audible pop, immediately cease-fire and notify your OIC or RSO. *An audible pop is a strange noise made when a primer detonates but fails to ignite any or all of the propellant. This is sometimes accompanied by excessive smoke escaping from the chamber area. The primer has enough power to kick the projectile out of the case and if a small portion of the propellant ignites, it can lodge the projectile partway down the barrel.*)
- p. Ammunition issue point is located \_\_\_\_\_ and ammunition is properly stored and guarded. The only types of ammunition that will be used on this range are \_\_\_\_\_. Note: Brief any notice of ammunition re-classification or ammunition information notice
- q. The misfire pit is located \_\_\_\_\_ (if required).
- r. Duds (UXO) (are/are not) \_\_\_\_\_ found on this range. Do not pick up, kick, or hit any ordnance on this range. Notify the RSO immediately of possible dud locations. Dud procedures for this range are as follows: \_\_\_\_\_.
- s. The designated smoking area is \_\_\_\_\_. Smoking is not allowed within 50 ft. of ammunition.
- t. Are there any left-handed shooters (or throwers for hand grenades)?
- u. Does anybody wear prescription glasses or contact lenses that do not have them?
- v. Brief any local range regulations, environmental policies or issues that might apply.
- w. This concludes the range safety brief. Are there any questions?

**Other Weapon Systems to account for:**

- a. Mortar systems: Handheld? Direct Lay? Bore sighted? Short round? Increment storage/burning procedures. Misfire Pit.
- b. Machine Guns: Tripod/bipod employment. Shift/cease? MSLs if maneuvering.
- c. Rockets and Missiles: Backblast area procedures, misfires, allowable number of rounds to be fired.
- d. SUAS? Appropriate lost link set?

Notes: \_\_\_\_\_

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