

RANGE AND TRAINING REGULATIONS

POVs Are Not Authorized on this Range

Range: R-130H	Lateral Limits: See Special Instructions	Allowable Wpns: Demolitions not to exceed (40) Lbs. NEW Claymore Shotgun (Breacher Round Only) Bangalore Grenade Rifle Entry Munitions (GREM)	Assigned to: CG, MCB Date Revised: 08 May, 2015
Location: 62134 85865	Impact Area: X-Ray		
Elevation: 565' AMSL	Troop Penetration: For Target Placement Only		
Type: Demolition Range	Engagement Distance: Min - N/A Max - N/A	Range Facilities: Observation bunker, Port-a-johns; Demo Pit; Ammo table	



Scheduling

1. 1ST MSOB Sponsored units must submit requests through 1ST MSOB.
2. Final approval & scheduling of this range must be submitted to Range Scheduling.

Scheduling/Use Conflicts	Conflict
I-IMP X- RAY	USE OF R-130H DOES NOT CLOSES I-IMP X- RAY
A-LZ PEREGRINE	LIVE FIRE @R-130H CLOSES AV OPS @LZ PEREGRINE
R-130C	LIVE FIRE @R-130H CLOSES R-130C
R-130D	LIVE FIRE @R-130H CLOSES R-130D
R-130F	LIVE FIRE @R-130H CLOSES R-130F
R-130I	LIVE FIRE @R-130H CLOSES ANY DWN RNG MVNT @R-130I
R-130J	LIVE FIRE @R-130H CLOSES R-130J
R-130K	BANGALORE L/F @R-130H CLOSES R-130K & LIVE FIRE @R-130H CLOSES R-130K (AERIAL SNIPER)
R-130M	USE OF R-130H CLOSES BREACHING @R-130M

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OIC/RSO Requirements

1. **A safety Brief shall be conducted prior to each live fire event to all participants.**
2. **All personnel shall wear required PPE during all training events.**
3. **OIC & RSO Requirements -**
 - a. **Live Fire Demolitions**
 - i. **OIC Requirement – GySgt or Above**
 - ii. **RSO Requirement - SSgt or Above**
 - b. **No Munitions**
 - i. **OIC Requirement – None**
 - ii. **RSO Requirement – Sgt. or Above**
 - iii. **LASER (If Used) LSSO Requirement – Sgt. or Above**

Special Instructions

1. **Demo Pit – 1**
 - a. **62134 85865**
2. **Demo Pit – 2**
 - a. **62162 85807 to 62155 85832**
 - b. **62201 85862 to 62212 85845**
3. **At no time will more than 40 lbs. total NEW ever be placed in the demo areas.**
4. **All time fuses shall be cut and tested to a length that allows the breaching team enough time to safely walk back to a secure area, bunker or defilade position plus an additional 30 seconds (verified by RSO).**
5. All charges will be dual primed and utilize a dual initiation system.
6. **Minimum of 30 seconds between charges.**
7. **All tactical and government vehicles will be parked outside of the established fragmentation safety arcs. NO POV'S are permitted on this range!**
8. The RSO shall check each shot hole, looking for unconsumed explosives prior to departing the range. **The RSO shall also ensure all shot holes are filled and the debris is policed-up.**
9. ALL unconsumed explosives shall be policed-up and consolidated for one last clean-up shot prior to the range going cold (**Not to exceed 40 lbs. NEW**).
10. ALL unused blasting materials shall be retrieved upon completion of training, and shall be returned to the Las Pulgas ASP.
11. ALL target materials which were used (blown) during training shall be policed-up and taken back with the unit.
12. **During general demolition training personnel shall be outside the surface danger area (SDZ) depicted on graphic or in the Observation Bunker 62025 85750 when firing is in progress.**
13. A total of three (3) radios are needed to safely use this range.
14. The RSO is responsible for all charges, and ensuring all misfire procedures are in compliance with current directives.
15. All demolitions shall be detonated in the demo pits.



Demo Pit 1



Demo Pit 2

Steel Cutting Charges

1. **Demo Pits – 1 or 2:**
2. Charges placed against steel, during training or demonstrations will be emplaced on the side nearest observers so that major fragments are propelled away from the observers.
3. If a steel-cutting charges are to be fired they will be fired in an excavated pit that is at least 1m deep and a mat made of hemp type material must cover the charge.
4. Steel-cutting charges **will not exceed 2 lbs.**
5. Personnel must be a minimum of 100m from the charge at detonation in a missile-proof shelter, or outside of the established fragmentation safety arcs.

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Charges placed on Concrete

1. **Demo Pit 2 Only:**
2. **Charges placed on concrete will not exceed 40 lbs. and shall be placed on the side nearest observers.**

Shaped Charges

1. **Demo Pits – 1 or 2:**
2. Shaped charges will be oriented so that gas jets will be directed down toward the target.
3. **Charges shall be placed on the side of the target nearest observers and directed away from observers.**
4. Observers will be at least 100m away in a missile-proof shelter, 275m in defilade

Cratering Charges

1. **Demo Pits – 1 or 2:**
2. The maximum charge to be fired in training will not exceed 40 lbs.
3. All cratering charges will be dual primed with detonating cord. Blasting caps will not be placed underground. Electric or non-electric caps will be attached to the detonating cord above ground.

Bangalore Torpedoes

1. **Demo Pit 1 Only:**
 - a. **Commercial**
 - i. Only one tube assembly shall be fired at a time- **NEW 15.77 lbs.**
 - a. **Field Expedient**
 - i. If a field-expedient Bangalore torpedo is used the explosive weight shall not exceed the standard issued torpedo. **(15.77 LBS)**
 - ii. Only a single engineer stake shall be used to form a Bangalore.
 - iii. OIC & RSO shall ensure that charge is placed so that engineer stake is against ground **(not toward sky)**.
2. Bangalore torpedoes will only be fired in a horizontal position on the ground.
3. Personnel will be in a missile-proof shelter 100m from the charge, or 200m away in defilade. For unprotected personnel in the open, the minimum safe distance (MSD) is 1,000m at right angles to axis of the Bangalore torpedo, 200m for personnel in the line of axis.
4. **Firing Data:**
PDF: 32° mag

Claymore

1. **Demo Pit 1:**
2. Range OIC will ensure mines are installed correctly and facing into the impact area.
3. All mines will be secured until the range OIC directs their issue.
4. Emplaced mine will not be disarmed except by order of the range OIC.
5. Firing devices will only be connected at the command of the range OIC.
6. **Only one (1) claymore at a time**
7. **All personnel that are not part of the firing team shall remain inside the observation bunker while claymore is detonated.**
8. **Only the RSO and the firing team shall be forward at the FP.**
9. **RSO will verify to OIC:**
10. After firing, the impact area will be inspected to ensure that all mines have detonated.
11. Misfires will be handled in accordance with FM 23–23.
12. Personnel will not be allowed within 16 meters to the rear of the mine.
13. Firing personnel may occupy an area between 16 and 100 m to the rear of the mine if they are located in a covered position, lying prone in a depression, or behind a physical barrier.
14. When there is a secondary missile hazard (i.e. tied to a tree or gravel present) personnel may occupy an area between 16 and 50 m if in a covered position.
15. All personnel will wear approved protective helmets, IBA and single hearing protection.
16. **Firing Data:**
Claymore Firing Point
62134 85865
PDF - 040° magnetic

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Grenade Rifle Entry Munition

1. **Demo Pit 1 Only - GREM**
 2. No personnel shall be within 15 meters of target.
 3. Single ear protection must be worn by all personnel within 40 meters from target.
 4. **Gunner must:**
 - a. Wear helmet, BLPS (Ballistic Laser Protective Spectacles), body armor, gloves, and rolled down sleeves.
 - b. Gunner will stay behind cover after firing.
 - c. All personnel within 40 meters of target must wear same protective gear and be under or behind cover.
 5. Use only M855 ball or M856 tracer ammunition to fire GREM on single shot (semi-automatic) mode.
 - a. Use of any other ammunition may cause premature function/detonation of GREM or weapon, causing serious injury or death to gunner.
 - b. **DO NOT mix GREM ammunition with GREM-TP ammunition.**
 6. Use only M16A2/M16A4 rifles or M4 series weapons to fire munitions.
 7. These are high recoil munitions.
 - a. **Recoil pad must be properly installed** on M4 carbines and pressed against shoulder prior to firing, or personal injury or buttstock damage may occur.
 8. Weapon must be in SAFE position and loaded before installing munition.
 9. **Gunner and GREM must be at least 15 meters from target.**
 10. Before squeezing weapon trigger, standoff rod must be installed, munition must be fully seated against weapon muzzle, and weapon must be properly aimed.
 11. Due to high recoil, extended eye relief from optics or iron sights is required to prevent injury to eyes, nose or face. **Keep a minimum of 3 inches away from charging handle.**
 12. Maintain a minimum of 15 meters from unexploded ordnance (UXO). Contact LONGRIFLE for EOD for disposal.
 13. **Firing Data:**
 - 15m Bunker - 62129 85851/PDF 006° mag
 - 30m Bunker - 62141 85836/PDF 335° mag
 - 40m Bunker - 62135 85825/PDF 347° mag
- GREM target - 62134 85865**

Range Guards and Signs

1. Range guards at 61835 85645
2. Demolition in progress Sign Posted at grid 61780 85895
3. RSO shall conduct a face to face with the RSO's on R130I and R130K
4. Range guards shall be posted with two-way radio communication with the RSO and a "demolition in progress" sign posted to prevent entry into the impact area No traffic/personnel shall enter the range without permission from the RSO

Breaching Operations

1. **Mechanical Breaching**
 - a. All mechanical breaching shall be conducted utilizing tools from issued breaching kits.
2. **Thermal/ Saws**
 - a. FDR Dependent.
3. **Ballistics Breaching**
 - a. Ammunition shall only be issued per event.
 - b. All ballistic breaching shall be directed 45° down into the room.
 - c. Only commercial breaching rounds shall be used.
 - d. **Wooden uprights and targets are to be supplied by the using unit.**
 - e. **When utilizing AA54**
 - i. Firing line: **62136 85858 to 62138 85858 PDF-50° mag**
 - ii. **Double hearing protection (earplugs & muffs) and eye protection (goggles) shall be worn by all personnel firing AA54 and by all personnel within 8.5 meters of the firing in close proximity to a reflective surface.**
 - iii. **All personnel within 8.5 meters to 30 meters of the firing point shall wear single hearing protection (earplugs or muffs).**
 - iv. **If using actual doors, only solid wood core wooden doors with a minimum of 1 ¾ inches thick shall be used.**
 - v. **Units shall provide a minimum of 2 inches of protection to the lock area.**

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4. **Explosive Breaching – A breaching Brief shall be conducted with the RCO NLT 14 days prior to event.**
 - a. **All breaches shall be set on doors and frames provided by the by the using unit that are mounted to reduce any hazards to the building.**
 - i. **Approved framing shall consists of:**
 1. ½ inch plywood covering entire threshold, sides and overhead of doorway.
 2. 2x4 placed to form a frame on plywood covering.
 3. Only use plywood ¼ inch to construct “doorway”.
 4. If using actual doors, only hollow core wooden doors shall be used.
 - b. **During breaching operations:**
 - i. The breach shall consist of a field expedient urban breaches (duel primed) at no more than .25 lbs. NEW **(Any Requests for annual waivers for this requirement shall not be approved).**
 - ii. Max Ord is 207 feet for vertical or fragmentation hazard.
 - iii. A maximum K – Factor of 18 (3.5 PSI) will be utilized and all personnel.
 - iv. Double hearing protection required for all PSIs at or above 1.68.
 - v. All personnel shall be set in position prior to initiating the breach.
 - vi. A safety Brief shall be conducted prior to each live fire event to all participants.
 - vii. Each breach shall be inspected and approved by the RSO.
 - viii. The RSO & OIC shall personally observe each live fire event.
 - ix. Time fuse shall be cut and tested by the RSO. **(30 Sec. Min. Time)**
 - x. Any Electrical System shall be tested by RSO.
 - xi. Only breacher rounds shall be used for shotguns.
 - xii. **Shielding required for all breaches** (i.e. Blast Shield, Bomb Blanket, placing breaching team around corner, etc.)
 - xiii. **CPU required when using any lead lined charges.**
5. **There will be additional safety personnel assigned as follows:**
 - a. A PSO shall travel with each breaching team.
 - b. Each PSO shall have positive communication with the RSO.
 - c. The RSO shall check each shot, looking for unconsumed explosives prior to departing the range.
 - d. All unconsumed explosives shall be policed-up and consolidated for one last clean-up shot prior to the range going cold **(Not to exceed .25 lbs. NEW)**.
 - e. All unused blasting materials shall be retrieved upon completion of training, and shall be returned to the Las Pulgas ASP.
 - f. All target materials which were used (blown) during training shall be policed-up and taken back with the unit.
6. Live Fire signs shall be posted at all times when the SACON House is hot as depicted in the graphics.
7. **The OIC is responsible for all charges, and ensuring all misfire procedures is in compliance with current directives.**

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Flaks and Helmets Required in Addition to the Below PPE					
		Double Hearing Protection and Eye Protection	Single Hearing Protection and Eye Protection	Eye Protection	
NEW OF CHARGE (TNT EQUIVELENT)		Safe Distance in Feet for Over Pressure (3.5 PSI)	Safe Distance in Feet for Over Pressure (1.2 PSI)	Safe Distance in Feet for Over Pressure (0 PSI)	Missile hazard in feet
In Pounds		K-Factor = 18	K-Factor = 40	K-Factor = 300	

0.025	5.3	11.7	87.7	95.9
0.050	6.6	14.7	110.5	120.8
0.075	7.6	16.9	126.5	138.3
0.100	8.4	18.6	139.2	152.2
0.125	9.0	20.0	150.0	164.0
0.150	9.6	21.3	159.4	174.3
0.175	10.1	22.4	167.8	183.5
0.200	10.5	23.4	175.4	191.8
0.225	10.9	24.3	182.5	199.5
0.250	11.3	25.2	189.0	206.6
0.275	11.7	26.0	195.1	213.3
0.300	12.0	26.8	200.8	219.6
0.325	12.4	27.5	206.3	225.5
0.350	12.7	28.2	211.4	231.2
0.375	13.0	28.8	216.3	236.5
0.400	13.3	29.5	221.0	241.7
0.425	13.5	30.1	225.6	246.6
0.450	13.8	30.7	229.9	251.3
0.475	14.0	31.2	234.1	255.9
0.500	14.3	31.7	238.1	260.3
0.525	14.5	32.3	242.0	264.6
0.550	14.7	32.8	245.8	268.7
0.575	15.0	33.3	249.5	272.7
0.600	15.2	33.7	253.0	276.6
0.625	15.4	34.2	256.5	280.4
0.650	15.6	34.6	259.9	284.1
0.675	15.8	35.1	263.2	287.7
0.700	16.0	35.5	266.4	291.2
0.725	16.2	35.9	269.5	294.7
0.750	16.4	36.3	272.6	298.0
0.775	16.5	36.7	275.6	301.3
0.800	16.7	37.1	278.5	304.5
0.825	16.9	37.5	281.4	307.6
0.850	17.1	37.9	284.2	310.7
0.875	17.2	38.3	286.9	313.7
0.900	17.4	38.6	289.6	316.7
0.925	17.5	39.0	292.3	319.6
0.950	17.7	39.3	294.9	322.4
0.975	17.8	39.7	297.5	325.2
1.000	18.0	40.0	300.0	328.0
1.250	19.4	43.1	323.2	353.3

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NEW OF CHARGE (TNT EQUIVELENT)	Safe Distance in Feet for Over Pressure (3.5 PSI)	Safe Distance in Feet for Over Pressure (1.2 PSI)	Safe Distance in Feet for Over Pressure (0 PSI)	Missile hazard in feet
In Pounds	K-Factor = 18	K-Factor = 40	K-Factor = 300	
1.500	20.6	45.8	343.4	375.5
1.750	21.7	48.2	361.5	395.3
2.000	22.7	50.4	378.0	413.3
2.250	23.6	52.4	393.1	429.8
2.500	24.4	54.3	407.2	445.2
2.750	25.2	56.0	420.3	459.5
3.000	26.0	57.7	432.7	473.1
3.250	26.7	59.2	444.4	485.8
3.500	27.3	60.7	455.5	498.0
3.750	28.0	62.1	466.1	509.6
4.000	28.6	63.5	476.2	520.7
4.250	29.2	64.8	485.9	531.3
4.500	29.7	66.0	495.3	541.5
4.750	30.3	67.2	504.3	551.4
5.000	30.8	68.4	513.0	560.9
5.250	31.3	69.5	521.4	570.1
5.500	31.8	70.6	529.6	579.0
5.750	32.2	71.7	537.5	587.6
6.000	32.7	72.7	545.1	596.0
6.250	33.2	73.7	552.6	604.2
6.500	33.6	74.7	559.9	612.1
6.750	34.0	75.6	567.0	619.9
7.000	34.4	76.5	573.9	627.4
7.250	34.8	77.4	580.6	634.8
7.500	35.2	78.3	587.2	642.0
7.750	35.6	79.2	593.7	649.1
8.000	36.0	80.0	600.0	656.0
8.250	36.4	80.8	606.2	662.8
8.500	36.7	81.6	612.2	669.4
8.750	37.1	82.4	618.2	675.9
9.000	37.4	83.2	624.0	682.3
9.250	37.8	84.0	629.8	688.5
9.500	38.1	84.7	635.4	694.7
9.750	38.5	85.5	640.9	700.7
10.000	38.8	86.2	646.3	706.7
10.250	39.1	86.9	651.7	712.5
10.500	39.4	87.6	656.9	718.2
10.750	39.7	88.3	662.1	723.9
11.000	40.0	89.0	667.2	729.5
11.250	40.3	89.6	672.2	735.0

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NEW OF CHARGE (TNT EQUIVELENT)		Safe Distance in Feet for Over Pressure (3.5 PSI)	Safe Distance in Feet for Over Pressure (1.2 PSI)	Safe Distance in Feet for Over Pressure (0 PSI)	Missile hazard in feet
In Pounds		K-Factor = 18	K-Factor = 40	K-Factor = 300	
11.500		40.6	90.3	677.2	740.4
11.750		40.9	90.9	682.0	745.7
12.000		41.2	91.6	686.8	750.9
12.250		41.5	92.2	691.6	756.1
12.500		41.8	92.8	696.2	761.2
12.750		42.1	93.4	700.8	766.3
13.000		42.3	94.1	705.4	771.2
13.250		42.6	94.7	709.9	776.2
13.500		42.9	95.2	714.3	781.0
13.750		43.1	95.8	718.7	785.8
14.000		43.4	96.4	723.0	790.5
14.250		43.6	97.0	727.3	795.2
14.500		43.9	97.5	731.5	799.8
14.750		44.1	98.1	735.7	804.4
15.000		44.4	98.6	739.9	808.9

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36° 86' N

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86

Range 130H

62° 00' E