FIRING/NONFIRING DATA

For use of this form see USAIC Regulation 350-19; the proponent agency is DPTMS

Log#01-21-13

TO: Chief, Range Division, Directorate of Plans, Training, Mobilization and Security Fort Benning, GA 31905	**Date:** 18 JAN 2013 **Range:** Galloway Range **Title:** BRM / ARM Marksmanship Training (Steel Targets) **Problem No:**
THRU: 316th Calvary BDE	**FROM:** 2-16th Calvary SQD-S3

SECTION I, TYPE OF TRAINING

☑ a. Live Fire ☐ b. Non-live Fire CP/Controller Coordinates: GA 0091 7743

SECTION II, DEMOLITIONS/GRENADES/MINES/PYROTECHNICS

Coordinates	Type	Model/DODAC	Size of Charges
NA			

SECTION III, WEAPONS/AMMUNITION REQUESTED

Coordinates of Weapons Position	Type Weapon/Model Number	Type Ammunition	Left Limit	Right Limit
Start:GA 0090 7739 to GA 0090 7748 Stop:GA 0060 7739 to GA 0060 7748	M16A4 / M4 M68 / PAC-4 / PEQ-2 / PEQ-15	5.56mm Ball / Laser Aiming Device	255 deg	285 deg

SECTION IV, LIVE FIRE EXERCISES Attach the following:

- ☑ Scenario of training to be conducted:
- ☑ Sketch of area:
- ☑ Risk Assessment:
- ☐ Attach FB Form 350-19-2-E-R if Mortar or artillery is being fired:

SECTION V, NON-LIVE FIRE TRAINING

Training area(s) to be occupied:

- ☐ Scenario of training to be conducted:
- ☐ Sketch of area(s) to be occupied:
- ☐ Risk Assessment:

Name/rank of requesting officer: Boutin, Peter J. / GS7 Pet J Boutin	Name/rank of Major Unit S3/Commander: Quiggle, Matthew J. / CPT/ SQD S3 MQ

SECTION VI, FOR RANGE DIVISION USE

DATE: 26 June 2013

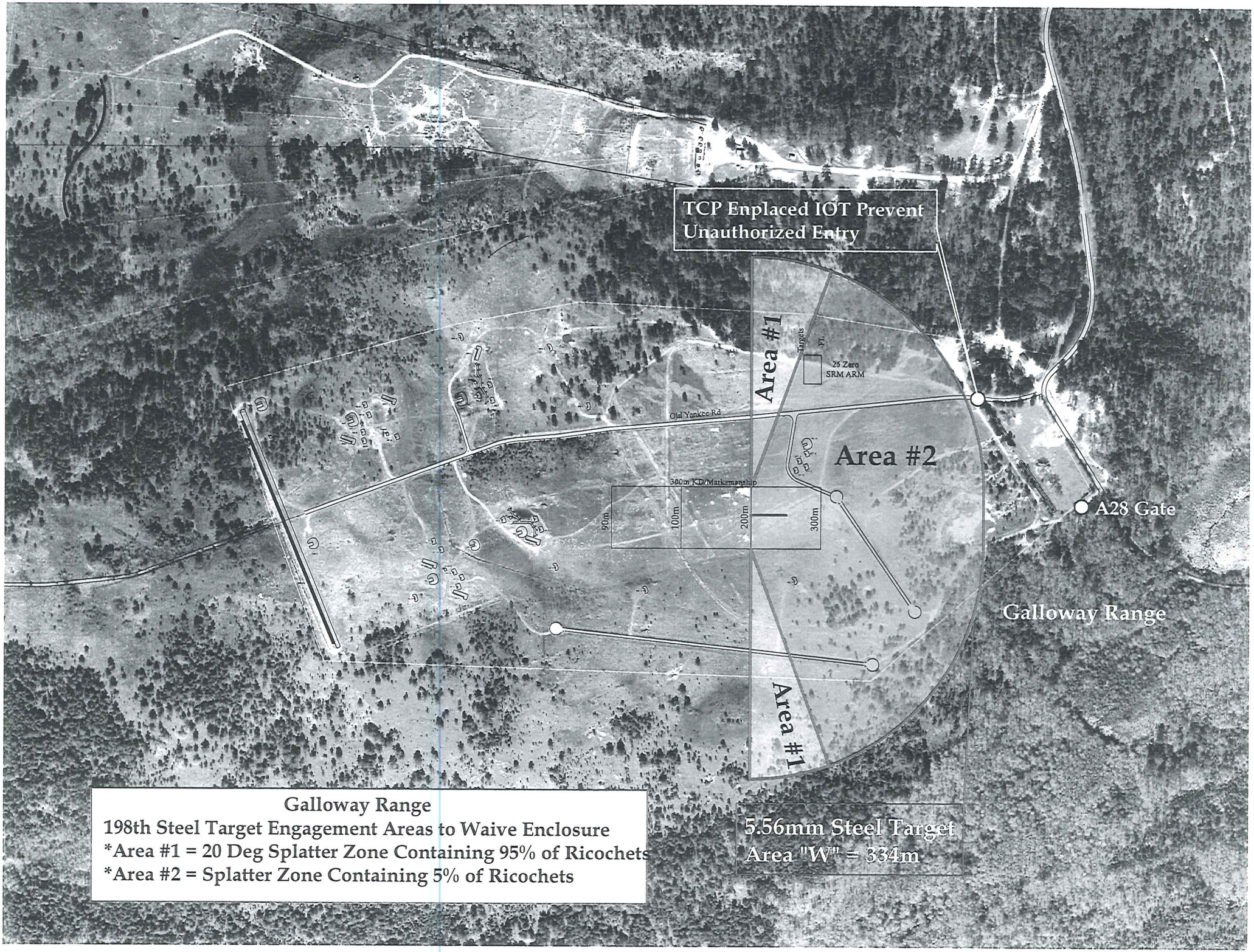
TO: 316th Calvary BDE	**FROM:** Range Division, Directorate of Plans, Training, Mobilization and Security Fort Benning, GA 31905

a. Roadblocks to be closed:
b. Road(s) to be closed/road barrier locations: A8, 18, 23, 28, 33A, 34

c. Remarks: This packet requires a current approved waiver for steel target engagements. LASER warning signs will be posted prior to Galloway Range receiving an opening code.

d. This approval expires: Indef

Chief, Range Division
Directorate of Plans, Training, Mobilization and Security
Brig S. Tw


TCP Enplaced IOT Prevent
Unauthorized Entry
Area #1
Targets
25 Zero
SRM ARM
Old Yankee Rd
Area #2
300m KD/Marksmanship
90m
100m
200m
300m
A28 Gate
Galloway Range
Area #1
Galloway Range
198th Steel Target Engagement Areas to Waive Enclosure
*Area #1 = 20 Deg Splatter Zone Containing 95% of Ricochets
*Area #2 = Splatter Zone Containing 5% of Ricochets
5.56mm Steel Target
Area "W" = 334m

Galloway Range 2-16 BRM/ARM Marksmanship Steel (Log #01-12-13) Roadblock List , 12 JAN 2012

BLOCK	GRID	LOCATION	TYPE
A-1	FA 911 792	Across firebreak 200m down Fiske Range at right end of KD berm. Permanently closed.	Cable
A-2	FA 910 783	Off Sightseeing Rd on unnamed trail opposite of entrance to LRC.	Gate
A-4	FA 925 766	Off Sunshine Rd 1,200 m W. of entrance to Grandstaff range.	Gate
A-5	FA 936 762	Across entrance road to Grandstaff Range. 10m N. of Sunshine Rd.	Gate
A-6	FA 939 763	Off Sunshine Rd 100m W. of Oswichee Creek. Permanently closed.	Cable/ Berm
A-8	FA 968 740	Across unnamed trail 30m N. of Sunshine Rd and 800m N.W. of entrance to Griswold Range.	Gate
A-10	GA 018 730	Across entrance road to Flint Range. 50m N. of Sunshine Rd.	Gate
A-11	GA 019 731	Across Lumpkin Trail 30m N. of its intersection with Sunshine Rd.	Gate
A-11A	GA 032 729	Rd guard pos # 2 for Garnsey Rng Obj 'E' (intersection Jamestown/Sunshine Rd's	Rd Grd # 2
A-12	GA 033 742	Across Garnsey Rd 50m W. of its intersection with Jamestown Rd.	Gate
A-12A	GA 029 744	Across Garnsey Rd 400m W. of A-12 Roadblock.	Gate
A-12B	GA 028 741	Across trail 150m SW of A-12A Roadblock. 50m W. of Range Bldg.	Gate
A-12C	GA 036 746	Road guard position # 3 for Garnsey Rng Objective 'E' (Jamestown at Lightning Rd)	Road Guard #3
A-13	FA 936 762	Across Sunshine Rd 10m E. of the entrance to Grandstaff Range (Road guard location).	Gate
A-14	FA 974 733	Across Sunshine Rd 10m W. of the entrance to Griswold Range. (Road guard location)	Gate
A-15	GA 021 799	Across entrance road to Buchanan Range.	Gate
A-15A	GA 021 798	Gate Across Good Luck Rd	Gate
A-15B	GA 022 796	Road guard position # 1 for Garnsey Rng Objective 'E' (Jamestown road SW corner of Engineer building)	Road Guard # 1
A-18	FA 993 828	Across Buckeye Rd 225m S. of its intersection with 1st Div Rd. and 50m E. of entrance to Duke Range	Gate
A-19	FA 973 825	Across entrance road to Patton Range 400m S. of its intersection with 1st Div Rd.	Gate
A-20	FA 974 827	Across entrance road to Dianda Range. 300m S. its intersection with 1st Div Rd.	Gate
A-22	GA 015 817	Across unnamed trail 50m N. of Brinson Range and 10m off Jamestown Rd.	Gate
A23	FA 983 756	Across Lumpkin Trail 200m E. of Griswold Range	Gate
A-23A	GA 005 748	On Lumpkin trail 50m NW of Objective 'E' on Garnsey Range.	Gate
A-23B	GA 005 747	Adjacent to A-23A gate on trail near intersection of Lumpkin trail	Install Gate
A-24	GA 015 811	10m inside entrance gate of Brinson Rng south of entrance road.	Gate
A-25	GA 016 789	Across fire break 10m W. of its intersection with Good Luck Rd.	Gate
A-26	GA 013 798	On L/S of Buchanan Range 50 meters W. of chow area across entrance to fire break.	Cable
A-27	GA 018 805	Across unnamed trl 175m N of intersection of Hourglass and Jamestown roads	Gate
A-28	GA 012 774	20 meters off Yankee road on south side of Galloway range.	Gate
A-28A	GA 011 776	30 meters south of Range Tower	Gate
A-30	GA 026 758	Across fire break leading to Garnsey Range. 140m SW of Brann Flat Range.	Gate
A-30A	GA 027 758	Across trail leading to Garnsey Range 50m E. of A-30 Roadblock	Gate
A-31	GA 020 745	Across fire break leading to Brann	Cable
A-32	FA 989 724	Across entrance road to Kunzig Range.	Gate
A-33	FA 974 734	Across entrance to Griswold Range.	Gate
A-33A	FA 979 739	150 meters west of Target Systems bldg on trail leading to move to contact site	Gate
A-33B	FA 982 739	20m N of Target Sys bldg on trail running on west side of bldg.	Install Gate
A-34	FA 947 760	Across entrance to Minter Hill 700m E. of Oswichee Creek.	Gate
A-38	FA 952 816	Across fire break 300m down range of firing line on Red Cloud Range on L. side of range.	Cable
A-39	FA 956 822	Across unnamed trail 100m S. of bldgs on Buckner Range on L. side of range	Cable
A-40	FA 967 823	Across fire break 50m down range on the left side of Pierce Range.	Gate
A-41	FA 972 820	Across fire break located on the right side of the firing line on Patton Range.	Cable
A-42	FA 978 820	Across fire break located on the left side of the firing line on Patton Range.	Cable
A-43	FA 983 823	Across fire break located on the right side of Booker Range Firing Line	Cable
A-44	FA 986 823	Across fire break 100m E. of the 25m flat range on Booker Range	Gate
A-45	FA 990 827	Across fire break located on the right side of the firing line on Duke Range.	Gate
A-45A	FA 991 829	Across Booker Breach site entrance road 200m past Duke Rng entrance gate	Gate
A-46	FA 984 832	Across unnamed trail 100m W. of the intersection of 1st Div Rd and Ivy Rd.	Gate
A-47	FA 990 833	Across unnamed trail 500m W. of the intersection with 1st Div & Buckeye Rd's	Gate
A-48	FA 995 827	Across fire break located on the right side of the firing line on Porter Range.	Cable
A-49	FA 998 827	Across fire break located on the left side of the firing line on Porter Range.	Cable
A-50	GA 000 830	Across unnamed trail 200m W. of entrance to Maertens Range.	Gate
A-51	GA 031 791	Barrier on Furman Rd	Barrier 1
A-52	GA 034 776	Barrier on Yankee Rd	Barrier 2
A-53	GA 035 776	Gate to Cole Range	Barrier 3
A-54	GA 046 749	Barrier off Lightning Rd on unnamed trail	Barrier 5
A-55	GA 057 759	Barrier off Lightning Rd on unnamed trail	Barrier 4

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY MANEUVER CENTER OF EXCELLENCE
1 KARKER STREET
FORT BENNING, GEORGIA 31905-5000

REPLY TO
ATTENTION OF

Policy Memorandum 385-63-7

IMBE-PLT-R

27 MAR 2013

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Use of Steel Targets in Marksmanship Training

1. REFERENCES:

a. AR 385-63 MCO 3570.1C, Range Safety, 30 January 2012.

b. DA Pam 385-63, Range Safety, 30 January 2012.

c. DA Training Circular (TC) 25-8, Training Ranges, 20 May 2010.

d. TRADOC Regulation 385-2, TRADOC Safety Program, 6 December 2011.

e. USASOC Regulation 385-1, USASOC Safety Program, 23 April 2010.

f. USMC Training and Education Command Safety of Use Memorandum 2-02, 3 December 2002.

g. MCoE Regulation 350-19, Installation Range and Terrain Regulation, 23 July 2010.

2. PURPOSE: To prescribe the safety guidance and procedures to allow the use of steel targets in basic and advanced marksmanship training on ranges and training facilities of Fort Benning, Georgia, for the following weapon systems: 9mm and .45 caliber pistols; 12-gauge shotguns; 5.56mm rifles; and 7.62mm/.30 caliber sniper rifles. This policy does not include procedures for use of the .50 caliber sniper rifle and steel targets.

3. BACKGROUND: The use of steel targets was introduced on Fort Benning by the U.S. Army Asymmetric Warfare Group in 2007, and has been fully integrated into marksmanship training. Non-reactive (targets that do not move) steel targets (legacy term was "iron maidens") provide the shooter with instant feedback on target engagement. However, steel targets increase the chance of injury to the shooter from bullet fragmentation (splash back) if the shooter engages too close to the steel target or if the steel target is not maintained or replaced when pitted or damaged. Targets made of poor quality steel also increase the chance of splash back or spalling. When using approved abrasion resistant steel that is properly positioned, steel targets provide effective feedback in both basic and advanced marksmanship training, provide a sense of realism, and enhance overall marksmanship learning outcomes. Training Circular 25-8 specifies standard range design with integrated placement of steel (iron maidens) (enclosure 1). U.S. Army Armament Research, Development, and Engineering Center (ARDEC) has not

tested or validated the use of steel targets or the safety certification of accepted steel target types. The TRADOC TCM-Live has not approved a Life Cycle Management Plan (LCMP) to procure, inspect, or replace steel targets within units; commanders currently procure with available operational funds. The TRADOC has not developed/published Army capabilities development documents, Soldier training plans, or doctrine to support training support packages/lesson plans for use of steel targets. Steel targets, as used today across the Army, simply offer another means to obtain that feedback and increase the training level of Soldiers as they prepare for combat.

4. POLICY: The guidance provided is based on empirical data collected from U.S. Army installations (Forts Bragg, Campbell, and Hood), the U.S. Army Asymmetric Warfare Group, U.S. Marine Corps, U.S. Army Special Operations Command (USASOC), and various Federal agencies (FBI). The following procedures must be followed to ensure the safety of Soldiers in training when using steel targets.

a. Steel targets will be constructed of abrasion resistant AR 500 steel (also known as High-Hardness Armor plate that is approved for use within the Department of the Army). The "AR 500" is a steel mill designation that is equal to a Brinell hardness scale of ~500 (actual scale can range from 477 to 534). All targets will be a minimum 3/8 inch thick (recommended 1/2 inch thick). The AR 500 steel is tempered through hardened wear resistant grades of abrasion resistant steel plate and used for severe impact. This is the industry standard for metal targets. Homemade or unit constructed targets are not authorized due to inconsistency in design, functioning, and most importantly the uncertainty in steel quality or hardness. Commercial vendors for steel targets must provide a certificate of hardness to ensure the steel targets meet the minimum hardness rating of AR 500. The certificate must remain on file with the using unit and the Garrison's Range Operations as long as the targets are being utilized on the installation. The MCoE Safety office will conduct periodic inspections of steel target serviceability and procedures.

b. Steel targets will be engaged with the shooter squared and facing the target. When conducting military training, all shooters and all personnel on the range within 10 meters of the firing line will wear the Army-standard issue safety standard (MIL-PRF-31013) impact resistant eyeglasses, body armor, ballistic helmet, ear protection, and gloves. When participating in marksmanship competitions under the supervision of the Army Marksmanship Unit, all shooters and all personnel on the range within 10 meters of the firing line will wear Occupational Safety and Health Administration and American National Standards Institute (ANSI) certified safety standard (ANSI Z87.1+) impact resistant eyeglasses and ear protection.

c. No engagements will be fired at oblique angles or parallel to the target. Angle of deflection is defined as the perpendicular exit of bullet fragments from target surface to the shooter. When a shooter is shooting directly at a target, the bullet splatter will angle off the target up to 20 degrees in all directions from the point of impact and travel up to 50 meters. Empirical evidence suggests 95 percent of all bullet fragments will exit the target within the 20 degree dispersion area (enclosure 2).

d. Non-reactive targets will be placed at a slight downward angle to direct the round's fragments towards the ground. A stationary target with a 20-degree forward cant (head forward of the body) produces the best angle of deflection with most consistency.

e. Actual engagements will be single rounds only for TRADOC Program of Instruction training. Fort Benning's tenant units will be considered for single round, controlled pairs, or double-tap engagements. If more than one steel target is to be used, the target will be set in a fashion so that the splatter from one target will not ricochet off the next. Each target must be placed with the direction of fire and the angle of deflection taken into consideration. The number of shooters on the firing line will be limited to keep all personnel out of the 20-degree dispersion area and minimum meters radius exclusion zone.

f. Automatic fire engagements are not authorized for any steel target engagements.

g. Steel target engagements will not be closer than 10 meters with pistol and shot gun ammunition; 100 meters with 5.56mm ammunition; and 150 meters with 7.62mm ammunition. Shotgun 12-gauge slug ammunition will not be fired at steel targets at distances of 50 meters or closer. Only U.S. Army procured ammunition with a Department of Defense Identification Code will be used to engage steel targets; the exception is 300 Win. Mag (minimum of 400 meters) and 338 Lapua (minimum of 200 meters) for sniper training. Units will not use steel targets for .50 caliber sniper marksmanship training due to high probability for target damage and/or penetration.

h. Steel core, steel jacket, and armor piercing ammunition will never be used to engage steel targets at any distance. As the new 5.56mm M855A1 Enhanced Performance Round is fielded, this type ammunition will not be used to engage steel targets. These types of ammunition will penetrate AR 500 steel targets and render the target unserviceable. Once a target is damaged, it will be classified as unserviceable and disposed/discarded in a manner that renders the steel target unusable for live marksmanship training.

i. Steel targets that have excessive surface pitting (slight surface depressions that are 1/32 inch or 0.8 mm deep into the steel), have round penetrations, or are warped, dented, or cracked will be classified as unserviceable and will not be used.

j. When integrating steel targets on a range with existing targetry (movers and/or stationary), the Range Safety Officer (RSO) must ensure that all steel targets being used are behind any existing target location at a distance not closer than a 10 meter radius exclusion zone in relation to other mechanical targets and/or range infrastructure. By ensuring steel targets are behind current targetry, this prevents damage from splash back to both the target box and any electrical systems being used on the range.

k. The RSO will inspect all steel targets for serviceability and placement of all steel targets prior to use by the training unit. The RSO will ensure targets are refaced with flat-based spray

paint only *[Note: The use of excessive paint masks target flaws and renders target inspections incomplete].* "Target slicking" is prohibited (applying grease or oil to the target face). The RSO will ensure that minimum safe engagement distance(s) from the muzzle to the steel target is established and maintained for each weapon system used. Empirical evidence suggests that impact velocity less than 2,600 feet per second will minimize target damage.

I. The Commander is ultimately responsible for the safety of all training. The RSO will be certified by the Commander when using steel targets. Commanders will establish Standard Operating Procedures and Composite Risk Assessment to address the inherent hazards associated with shooting steel targets.

5. APPLICABILITY. This memorandum provides guidance that applies to all ranges on Fort Benning, Georgia when using steel targets within the Fort Benning Range/Training Complex. Given that (1) ARDEC has not tested or validated the use of steel targets or the ballistics associated with its use, and (2) current use is based on empirical evidence, the use of steel targets is classified as a deviation from established range standards and procedures; as such, only the installation Senior Commander/CG, MCoE, may authorize deviations (enclosure 3). Training units desiring to use steel targets will submit request(s) for waiver(s) in accordance with AR 385-63, DA Pam 385-63, and MCoE Regulation 350-19.

6. PROPONENT: Mr. Douglas M. Greenway, Installation Range Management Officer, (706) 545-4619/3542 or e-mail douglas.m.greenway.civ@mail.mil.

FOR THE COMMANDER:

ROBERT E. SCHOPPA
Colonel, Infantry
Chief of Staff

3 Encls
1. TC 25-8 Standard Range Design with Integrated "Iron Maidens" (Steel Targets)
2. Steel Target Placement and Dispersion Area
3. AR 385-63 Deviation Limitations (Waiver Requirements)

DISTRIBUTION:
ADMIN L, CSM/SGM, MSC DCO, and MCoE BN CDRs Lists

Enclosure 1: TC 25-8 Standard Range Design with Integrated "Iron Maidens" (Steel Targets)

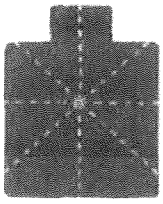
Type Range	Code	Distance - Firer to Steel Target	Total Steel Targets
Qualification Training Range (QTR)	FCC 17809	-- 350m to 575m -- 900m to 1000m	20
Automated Sniper Field Fire (SFF) Range	FCC 17812	-- 325m to 575m -- 900m to 1000m	20
Heavy Sniper Range	FCC 17829	-- 300m to 600m -- 845m to 1775m	10
Multipurpose Machinegun (MPMG) Range	FCC 17833	-- 375m to 600m	20

Note: TC 25-8 specifies a standard range design for all new and renovated ranges. The ranges above integrate the use of steel targets for various weapons systems and represent distances from the shooter to the target to be integrated in all future ranges. None of Fort Benning's current ranges are designed for the integration of steel targets.

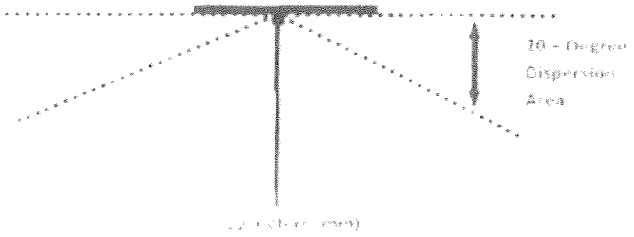
Encl 1

Enclosure 2: Steel Target Placement and Dispersion Area

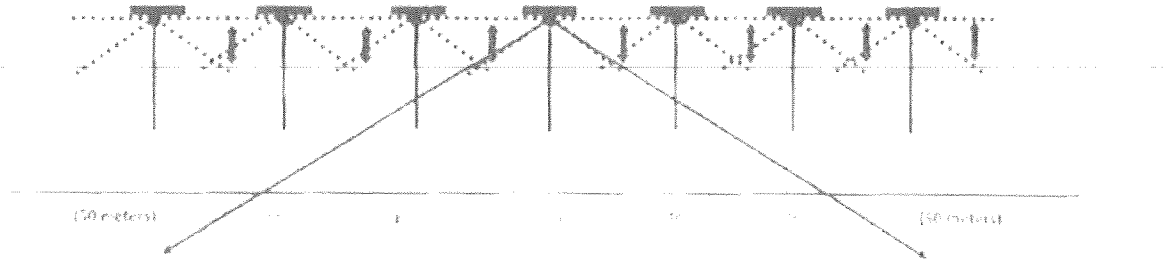
Front
View



Top
View



Top View



Firing Line 10 meters (min)

ENCL 2

Enclosure 3: AR 385-63 Deviation Limitations (Waiver Requirements)

- Deviation from range standards and procedures
  - A deviation, as discussed in this regulation/order, is the temporary departure from established range standards and procedures. An example would be reducing SDZ dimensions when terrain, artificial barriers, or other compensating factors which mitigate risks to make smaller SDZs safe. Guidelines for preparing a range safety deviation are contained in DA Pam 385–63.
  - Army Senior Commanders in the grade of O–7 and above may authorize deviations.
- Deviation limitations. Deviations are limited to:
  - Reducing SDZ dimensions when terrain, artificial barriers, or other compensating factors make smaller SDZs safe.
  - Modifying prescribed firing procedures to increase training realism (such as accepting increased risk when the risks have been incorporated into an approved SDZ) as appropriate for the proficiency of participants.
  - Allowing personnel not authorized within the SDZ (per DA Pam 385–63), unless prohibited.
  - Approved deviations will be effective for one year or less. Expired deviations may be renewed by the respective approval authority provided conditions cited in the original deviation have not changed.
  - Any accident or incident occurring under an approved deviation will cause automatic termination of the deviation until an investigation is completed and the deviation revalidated by the respective approving authority.
  - Conflicts regarding level of risk determination will be resolved by the commander holding the deviation authority for the highest level of risk deemed in conflict.
  - For live-fire training operations conducted under an approved deviation by nonresident units, the host installation commander/senior commander must approve training at a host installation.

Encl 3

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Date Submitted: 1/18/2013

EMD Number: 1301805 **Project#:** Unknown **Project Title:** GALLOWAY LIVE FIRE USING STEEL TARGETS

Description of proposed action:

LIVE FIRE EXERSISE USING 5.56 MM AT STEEL TARGETS THAT ARE JUST PLACED ON TOP OF THE GROUND

Project Location:

GALLOWAY

Amount, Description, Location of Disturbance/Digging:

None

Number of Personnel:

100

Type of Ammunition:

5.56MM Live

Number/Types of Trees:

None

Size of Project Area:

Duration of Action: Start: 6/1/2013 Stop: 9/30/2013

Proponent: Pete Boutin 706-626-8324

Organization/Unit: 2-16TH CALVARY

Number/Types of Vehicles:

Number of vehicles:5
Types of vehicles:1XLMTV, 3XHMMWV, 2/15 PAX VAN
No-Vehicles will be going off road.

****

DECISION: Concur with conditions

This Action is adequately covered in the Existing EA titled: 'Ongoing Mission and siting Activities, USAIC, FT. Benning, GA.'

(NA): Training involving LIVE FIRE and tracked vehicles has NO CATEX -- "Ongoing Mission and Siting Activities, USAIC, Ft. Benning, GA."

****

REC APPROVED THROUGH 30 SEPTEMBER, 2013

Natural Resources - RCW **None** **Michael Barron (706 544 7080), 1/25/2013**

Noise Conditions: **Ellis Leeder (706 545 2400), 1/23/2013**

This is training operations that must be conducted. If there is any noise complaints received, the Environmental Management Division Installation Operational Noise Monitoring Program (IONMP) and or Public Affairs Office (PAO) programs will investigate and then recommending operational noise mitigation actions to the appropriate personnel for the training actions. In accordance with the Army's policy on environmental noise management, all efforts shall be made to minimize noise annoyances to the highest extent practicable with training operations without interfering with the proposed missions. Please follow the fly friendly program avoiding no fly zones. Please follow good smoke management practices not allowing smoke or dust to travel off Installation boundary into public areas or roads. Please increase distance between vehicles when dust conditions are extreme, see Table 5-3. CS gas use should be utilized in designated areas only, contact Range Control for a listing of approved sites. If any assistance or a copy of MCoE Regulation 350-19 or the IONMP noise plan is needed for review, please feel free to contact Ellis Leeder at 706.545.2400 or email ellis.p.leeder.civ@mail.mil or visit the Range Control Website for the updated version of MCoE Regulation 350-19

Hazardous Materials/Waste Conditions: **Ted Williams (706 545 7579), 1/18/2013**

1. Ensure personnel know the correct procedure for handling misfires at the range: 2. Closed containers (ammunition can marked 'MISFIRES") will be used for the collection of misfires at each firing range.

-The MISFIRE container will stay closed except to add or remove misfires.
-Misfires SHALL NOT BE COLLECTED in any open container or cardboard box.

3. Ensure that all containers for collection of patches and swaps are kept closed unless weapons cleaning products are being added. Contact EPMB for detailed information on the proper disposal of waste products resulting from the training.

EMD Number: 1301805 **IJO#** Unknown **Project Title:** GALLOWAY LIVE FIRE USING STEEL TARGETS

****

CWA - Training Conditions: **Leah Ropski (706 626 0492), 1/18/2013**

Environmental Review: Caution within training areas and motor pools should be taken to protect all nearby waterways (including perennial, intermittent streams and wetlands); as well as ground surfaces and any other sensitive areas in the vicinity of the training areas. Potential spills/releases from this activity that may occur before and/or during the FTX include: 1. Discharge and/or improperly disposal of oil or hazardous substances into or upon land, water, or into ground water areas from storage, handling and/or transportation of hazardous materials/waste; 2. Vehicle/equipment/generators leaks; 3. Fuel loading/unloading/refueling operations; 4. Field mess facilities/equipment/operations, and/or 5. Ammunitions /explosives (as applicable, before and/or during the FTX).

General SPCC Requirements: Ensure all hazardous materials are properly storage to prevent spill/discharges, to meet safety requirements for storage, and that containers are not exposed to the weather. Have adequate spill response supplies available during exercise for any spills that may likely occur. Use drip pans under vehicles and provide secondary containment for any fueling activities and hazardous material/waste storage. Locate all refueling operations and storage of hazardous materials/waste away from waterways and sensitive areas. See attached section on prevention procedures and CHECKlist (Example Unit/Activity SOP for Training and Deployment) to be used during training exercise to comply with SPCC plan requirements. Ensure all wastewater from field mess equipment/operations particularly those involving oil/grease are collected and dispose properly. Do not discharge any wastewater into storm drains or dispose of oil/grease waste directly into land.

General ISCP Requirements: In the event of a spill/discharge -- notify Range Control by radio or call 544-6291, and they will notify E-911 for Fire Department/HAZMAT Team assistance and/or notification of the EMD office (Spill Beeper 706-317-6584). As appropriate, and if personnel are trained – REACT to minimize spill damages. Submit a spill report to the EPMB Spill Program Manager (use Spill Response Report attached). All spills reaching navigable water must be reported immediately. The unit is responsible for the final cleanup of any spill during this exercise. Coordination with this office is required for clearance of the site.

Signature John E Brown

John E Brown
NEPA Program Manager
Date 28 JAN 2013

Signature Christopher Hamilton

Christopher E. Hamilton, PhD
EPMB Chief
Date 29 Jan 13

COMPOSITE RISK MANAGEMENT WORKSHEET

For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MSN/TASK	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED *(YYYYMMDD)*
ABOLC ASLT-E Steel Target Firing on Galloway Range	01 JUN 13	31 MAY 14	20130118

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION
QUIGGLE	CPT	2-16 CAV Operations Officer

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFEC-TIVE?
Marksmanship Training	1. Ricochet from firing at steel target	E	1a. Defined firing line/points with minimum distance of 100m between target and firer 1b. Targets emplaced IAW Range Packet Diagram	H	1a. Safety brief, continuous monitoring of movement / maneuver 1b MCoE PM 385-63-7	1a. RSO conducts safety brief / addresses CRM 1b. RSO/OIC and cadre supervise firing	
			1c. TCPs/barriers block access to roads 1d. Range OIC ensure targets are not set at oblique or parallel angles to firers 1e. Soldiers fire from surveyed firing points		1a. RSO verify barriers are in place 1b. MCoE PM 385-63-7		
			designated SDZ 1f. Non-firers remain outside ricochet area		1c. Range executed IAW MCoE regulation 350-19 1d MCoE PM 385-63-7		
			1g. OIC will ensure no mechanical targets or other range infrastructures will be within the 10 meter radius "exclusion zone" from the placement of the targets		1d MCoE PM 385-63-7		
	2. Faulty / Damaged Steel Targets	E	2a. Range OIC or RSO will inspect targets for safety and servicability 2b. Use only commercially purchased abrasion resistant AR 500 Steel Targets	H	2a. Manufacturers data sheets/ range safety brief 2b. MCoE PM 385-63-7 2c. Supervison and Oversight	2a. OIC/RSO/SME's conducts versees/inspection 2b. RSO/OIC and cadre supervise firing	
	3. Firing Outside of Assigned Lanes	M	3a. Firers will be briefed on the range layout and conduct of the range 3b. Firing lanes will be clearly marked	L	3a. Safety brief, continuous monitoring of movement / maneuver	3a. RSO conducts safety brief 3b. RSO/OIC and cadre supervise firing	

Additional space for entries in Items 5 through 11 is provided on Page 2.

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED *(Check one)*

☐ LOW ☐ MODERATE ☑ HIGH ☐ EXTREMELY HIGH

14. RISK DECISION AUTHORITY

a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE
DAVIDSON	COL	316TH CAVALRY BRIGADE FORT BENNING GA, 31905	

ITEMS 5 THROUGH 12 CONTINUED:

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFEC-TIVE?
Severe Weather Procedures	Tornado / Electrical Storms / Fire / Blizzard Likely / Marginal	M	Safety Brief will address courses of action for scenarios and the proper response for each. OIC will monitor Range Control net for weather updates and notify firing line as necessary.	L	TRADOC 385-2, RSO, SB Safety Brief Likely / Negligible	Continuous supervision from OIC, RSO ensure proper procedures are executed upon implementation	
Weather injury Prevention	Dehydration, Superhydration, Heat Injuries Likely / Marginal	H RV M	NCO's will ensure water intake is IAW with Wet Bulb Globe Index Matrix. Cadre will ensure water is available prior to training.	M RV L	TRADOC 385-2, RSO, SB Cadre monitoring Peer Coach monitoring Likely / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
		M	Cadre and Peer Coaches will monitor each other for symptoms. Cadre will ensure that a trained Medic or CLS is on hand with FLA.	L	TRADOC 385-2, RSO, SB Cadre monitoring Peer Coach monitoring Likely / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Weather injury Procedures	Cold weather injuries Likely / Marginal	M	Cadre will all Soldiers are dressed in accordance with weather conditions and battle buddys monitor each other for symptoms with CLS or Medic on site	L	TRADOC 385-2, RSO, SB Safety Brief Likely / Negligible	OIC / RSO / Cadre	
Hearing Conservation	Hearing loss Likely / Marginal	M	All Cadre will ensure that Soldiers have ear plugs in prior to movement to the firing line. Additional hearing protection on site available at the ammo point.	L	TRADOC 385-2, RSO, SB Cadre monitoring Peer Coach monitoring Seldom / Marginal	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Ammunition Procedures	Soldiers removing live ammunition from the range. Occasional/ Marginal	M	Upon completion of training, all Soldiers and their gear will be inspected by the lane safeties supervised by RSO. Amnesty box located at ammo point	L	TRADOC 385-2, RSO, SB Seldom / Marginal	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Motor Vehicle Safety	Vehicular (tactical and POV) accidents enroute to range Seldom / Marginal	L	All posted speed limits and road conditions issued by range control will be obeyed by everyone attending the range. No authorized POVs in TA	L	TRADOC 385-2, RSO, SB Unlikely / Marginal	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Prevention of Wildlife Injuries	Wildlife on range Likely / Negligible	L	All Cadre, Safeties and Peer Coaches will ensure that no Soldier handles wilflife. Safety brief will address procedures prior to execution of training	L	TRADOC 385-2, RSO, SB Cadre monitoring Peer Coach monitoring Likely / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	

COMPOSITE RISK MANAGEMENT WORKSHEET

For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MSN/TASK	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED *(YYYYMMDD)*
ABOLC BRM: Griswold Range	1 JUN 2013	31 MAY 2014	20130118

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION
QUIGGLE	CPT	2-16 CAV S3

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFEC-TIVE?
Prevention of an Accidental Discharge	Negligent / Accidental Discharge / Gun Shot Wound Seldom / Critical	M	Soldiers will maintain muzzle awareness at all times; Weapons Safety Posture dependent. All weapons will be in a Cleared status while not on the firing line. Weapons will remain on safe until		TRADOC 385-2, RSO, SB FM 3-22.09 Lane Safeties Peer Coaches Critical/Unlikely	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
			directed otherwise by the tower. While on firing line, Soldiers will take all directions from the tower directing posture change from Ammo Prepared, Locked and Loaded.	L	TRADOC 385-2, RSO, SB FM 3-22.09 Lane Safeties Peer Coaches Critical/Unlikely	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Prevention of eye injury	Injury from ejected cartridge or other projectiles Occasional / Marginal	M	Cadre will ensure that all personnel are in proper uniform including eye protection; peer coaches ensure that are located safe distance from weapon ejection port.	L	TRADOC 385-2, RSO, SB Lane Safeties Peer Coaches Occasional / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
UXO Procedures	Handling of UXO Seldom / Critical	M	Safety Brief will cover that any UXO will not be handled if found. Report all UXO to Cadre; mark and report to Range Control.	L	TRADOC 385-2, RSO, SB Lane Safeties Peer Coaches Seldom / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Weapon Procedures	Weapons leaving range without clearing Seldom / Critical	M	All weapons will be inspected twice; by Lane Safety before firer leaves firing position, then by RSO and the firer at the clearing barrel. Ensure all weapons in Cleared status before exiting line	L	TRADOC 385-2, RSO, SB Lane Safeties 5:1 student:cadre ratio Unlikely / Critical	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Range Safety	Debris on Range	L	Tower, OIC, RSO, and Lane Safeties will monitor the range and call a cease fire until debris is removed.	L	TRADOC 385-2, RSO, SB	Continuous supervision from OIC, RSO, Safeties and Buddy checks	

Additional space for entries in Items 5 through 11 is provided on Page 2.

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED *(Check one)*

LOW ☑ MODERATE ☐ HIGH ☐ EXTREMELY HIGH

14. RISK DECISION AUTHORITY

a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE
DIANO, OSCAR	LTC	2-16 CAV COMMANDER	Oscar F. Diano

ITEMS 5 THROUGH 12 CONTINUED:

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFEC-TIVE?
Severe Weather Procedures	Tornado / Electrical Storms / Fire / Blizzard Likely / Marginal	M	Safety Brief will address courses of action for scenarios and the proper response for each. OIC will monitor Range Control net for weather updates and notify firing line as necessary.	L	TRADOC 385-2, RSO, SB Safety Brief Likely / Negligible	Continuous supervision from OIC, RSO ensure proper procedures are executed upon implementation	
Weather Injury Prevention	Dehydration, Superhydration, Heat Injuries Likely / Marginal	H RM M	NCO's will ensure water intake is IAW with Wet Bulb Globe Index Matrix. Cadre will ensure water is available prior to training.	M RM L	TRADOC 385-2, RSO, SB Cadre monitoring Peer Coach monitoring Likely / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
		M	Cadre and Peer Coaches will monitor each other for symptoms. Cadre will ensure that a trained Medic or CLS is on hand with FLA.	L	TRADOC 385-2, RSO, SB Cadre monitoring Peer Coach monitoring Likely / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Weather injury Procedures	Cold weather injuries Likely / Marginal	M	Cadre, will ensure all soldiers are dressed in accordance with weather conditions and battle buddies monitor each other for symptoms with CLS or Medic on site.	L	TRADOC 385-2, RSO, SB Likely / Negligible	OIC, RSO, Cadre	
Hearing Conservation	Hearing Loss Likely / Marginal	M	All Cadre will ensure that all Soldiers have ear plugs in prior to movement to the firing line. Additional hearing protection on site available located at ammo point.	L	TRADOC 385-2, RSO, SB Lane Safeties check for use Peer Coaches ensure proper use Likely / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Ammunition Procedures	Soldiers removing live ammunition from the range Occasional / Marginal	M	Upon completion of training, all Soldiers and their gear will be inspected by the Lane Safeties supervised by the RSO. Amnesty box located at ammo point.	L	TRADOC 385-2, RSO, SB Seldom / Marginal	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Motor Vehicle Safety	Vehicular (tactical and POV) accidents enroute to range Seldom / Marginal	L	All posted speed limits and road conditions issued by range control will be obeyed by everyone attending the range. No unauthorized POVs in TA.	L	TRADOC 385-2, RSO, SB Unlikely / Marginal	Continuous supervision from OIC, RSO, Safeties and Buddy checks	
Prevention of Wildlife Injuries	Wildlife on Range Likely / Negligible	L	All Cadre, Safeties and Peer Coaches ensure that no Soldier handles wildlife. Safety Brief will address procedures prior to execution of training.	L	TRADOC 385-2, RSO, SB Lane Safety supervision Peer Coach supervision Likely / Negligible	Continuous supervision from OIC, RSO, Safeties and Buddy checks	

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY MANEUVER CENTER OF EXCELLENCE
1 KARKER STREET
FORT BENNING, GEORGIA 31905-5000

REPLY TO
ATTENTION OF
ATZB-SO

24 June 2013

MEMORANDUM FOR Commander 2/16 CAV, Attn: CPT Matthew Quiggle, Fort Benning, GA 31905

SUBJECT: 2/16th CAV A-BOLC Adaptive Soldiers and Leaders Training and Education (ASLTE) on Galloway Range Concept and Safety Review

1. References.

a. 2/16th CAV A-BOLC Adaptive Soldiers and Leaders Training and Education (ASLTE) on Galloway Range, 17 January 2013.

b. Army Regulation 385-10, The Army Safety Program, 24 August 2007

c. Army Regulation 385-63, Range Safety, 19 May 2003

d. Department of the Army Pamphlet 40-501, Hearing Conservation Program, 10 December 1998

e. Department of the Army Pamphlet 385-10, Army Safety Program, RAR 19 January 2010

f. Department of the Army Pamphlet 385-30, Mishap Risk Management, RAR 01 February 2010

g. Department of the Army Pamphlet 385-63, Range Safety, RAR 12 May 2009

h. Field Manual 5-19, Composite Risk Management, August 2006

i. MCoE Regulation 350-19, Range and Terrain Regulation, 23 July 2010

j. MCoE Policy Memorandum 385-6-12, Composite Risk Management, 15 December 2010

2. Document received on 17 June 2013.

3. Concur w/comment.

Noted RSV

a. Adaptive Soldiers and Leaders Training and Education (ASLTE) POIs, TSPs, CADs and lesson plans, for this training event(s), have not been published and / or reviewed for comment

and feedback. All subject references to training periods, objectives, and outcomes are without reference.

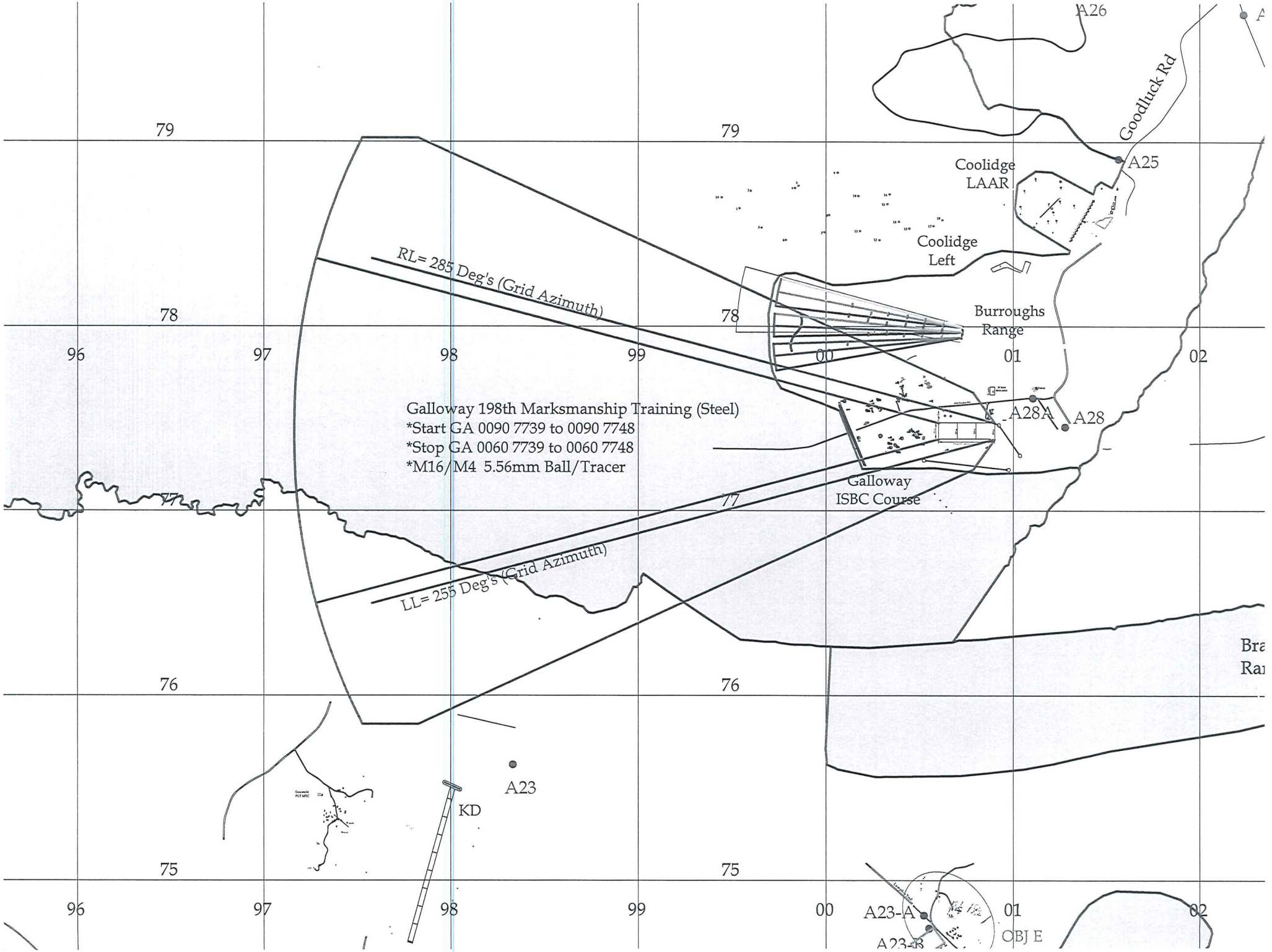
b. MCoE Policy Memo 385-6-13 is invalid. MCOE PM 385-6-14, dated 22 October 2012 is current.

c. RMW (ABOLC BRM: Galloway Range), Block 7 & 9, pg 2. "Dehydration / Superhydration, Heat Injuries", recommend that initial risk be elevated to "HIGH" and residual to "MODERATE" to more accurately reflect the climate, exposure, and frequency of this event occurring on Fort Benning.

d. RMW (ABOLC ASLT-E Steel Target Firing on Galloway Range), Block 7 & 9, pg 2. "Dehydration / Superhydration, Heat Injuries", recommend that initial risk be elevated to "HIGH" and residual to "MODERATE" to more accurately reflect the climate, exposure, and frequency of this event occurring on Fort Benning.

4. Point of contact is Mr. Michael W. Risher II, MCoE/Fort Benning Safety Office, Comm. (706) 545-8278, Govt. Cell. (706) 604-7249, michael.w.risher.civ@mail.mil

JILL E. CARLSON
Director, MCoE/USAG Safety


A26
Goodluck Rd
A25
Coolidge
LAAR
Coolidge
Left
RL= 285 Deg's (Grid Azimuth)
Burroughs
Range
79
78
77
76
75
96
97
98
99
00
01
02
Galloway 198th Marksmanship Training (Steel)
*Start GA 0090 7739 to 0090 7748
*Stop GA 0060 7739 to 0060 7748
*M16/M4 5.56mm Ball/Tracer
A28A
A28
Galloway
ISBC Course
LL= 255 Deg's (Grid Azimuth)
A23
KD
A23-A
A23-B
OBJ E