

FIRING/NONFIRING DATA

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

TO: Chief,
Range Division,
Directorate of Plans, Training, Mobilization and Security
Fort Benning, GA 31905

Date: 29 July 15
Range: Maertens Range
Title: BRM Live Fire with RHTT
Problem No:

LOG# 7-6-15

THRU: S3, 199TH INFANTRY BRIGADE
Fort Benning, GA. 31905

FROM: S3, 2-16TH CAVALRY SQUADRON
Fort Benning, GA. 31905

SECTION I, TYPE OF TRAINING

a. Live Fire b. Non-live Fire CP/Controller Coordinates: GA 0011 8214

SECTION II, DEMOLITIONS/GRENADES/MINES/PYROTECHNICS

Coordinates	Type	Model/DODAC	Size of Charges

SECTION III, WEAPONS/AMMUNITION REQUESTED

Coordinates of Weapons Position	Type Weapon/Model Number	Type Ammunition	Left Limit	Right Limit
Lanes 6-10 0014 8281 to 0013 8281	M-4	5.56mm Ball/Tracer	3200	3225
Lanes 11-15 0012 8281 to 0011 8281	M-4	5.56mm Ball/Tracer	3225	3250

SECTION IV, LIVE FIRE EXERCISES Attach the following:

SECTION V, NON-LIVE FIRE TRAINING

<input checked="" type="checkbox"/> Scenario of training to be conducted:	<input type="checkbox"/> Training area(s) to be occupied:
<input checked="" type="checkbox"/> Sketch of area:	<input type="checkbox"/> Scenario of training to be conducted:
<input checked="" type="checkbox"/> Risk Assessment:	<input type="checkbox"/> Sketch of area(s) to be occupied:
<input type="checkbox"/> Attach FB Form 350-19-2-E-R if Mortar or artillery is being fired:	<input type="checkbox"/> Risk Assessment:

Name/rank of requesting officer:
Adam Paich/ SFC / Squadron S3 Operations
Adam Paich

Name/rank of Major Unit S3/Commander:
Cameron Ridgway / CPT / Squadron S3
Cameron Ridgway

SECTION VI, FOR RANGE DIVISION USE

DATE: 1 September 2015

TO: S3, 199th INFANTRY BRIGADE
Fort Benning, GA. 31905

FROM: Range Division,
Directorate of Plans, Training,
Mobilization and Security
Fort Benning, GA 31905

a. Roadblocks to be closed:	See Roadblock and Roadguard List
b. Road(s) to be closed/road barrier locations:	
c. Remarks:	
d. This approval expires: 31 Aug 17	

Chief, Range Division
Directorate of Plans, Training, Mobilization and Security
Brad S. Tucker

TRANSMITTAL, ACTION AND CONTROL

For use of this form see MCoE Memo 25-52; the proponent is SGS

1. SGS LOG:	2. IN SGS:	3. OUT SGS:	4. DATE PREPARED: 20 July 2015
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5. SUBJECT:
2-16 CAV Maertins Range review of ABOLC Employment of Direct Fire with RHTT Exercise and steel target waiver

6. ACTION OFFICER/OFFICE SYMBOL/PHONE NUMBER: SFC Paich, Squadron Master Gunner 2-16 CAV 626-8324	7. DIRECTOR'S/COMMANDER'S SIGNATURE: Dennis R. Atkins, III LTC, AR, Commanding 
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<input checked="" type="checkbox"/> SIGNATURE	<input checked="" type="checkbox"/> APPROVAL	<input type="checkbox"/> INFORMATION
<input type="checkbox"/> SGS	<input type="checkbox"/> DCoFS	<input type="checkbox"/> GC CSM
<input type="checkbox"/> USAIS CSM	<input checked="" type="checkbox"/> USAARMS CSM	<input type="checkbox"/> MCoE CSM
<input type="checkbox"/> CDID	<input type="checkbox"/> GC	<input type="checkbox"/> CIG
<input type="checkbox"/> CoFS	<input type="checkbox"/> SA	<input type="checkbox"/> DCG-NG
<input type="checkbox"/> Comdt, IN School	<input checked="" type="checkbox"/> Comdt, AR School	<input checked="" type="checkbox"/> CG

1. PURPOSE: To obtain review and approval of the Maertins Range Employment of Direct Fire with RHTT Exercise Packet

2. RECOMMENDATION: Approval of the Maertins Range Employment of Direct Fire with RHTT Exercise Packet

3. DISCUSSION:

REFERENCES: Army Regulation 385-63 and DA Pam 385-63, Range Safety, Army Regulation 350-1, Army Training, MCoE Regulation 350-19, Range and Terrain Regulation, FM 3-23.30, Grenades and Pyrotechnic Signals, TM 9-1300-206, Ammunition and Explosives Standards, FM 3-22.9, M4 Rifle, FM 3-20.98, Reconnaissance Scout Platoon

1. Steel Target firing will be on Maertins Range with a current and approved packet by Range Operations.

2. Waive the use of steel targets and ballistics associated with it's use as contractor data that was used to build SDZs has not been tested or validated by ARDEC and is classified as a deviation from established range standards and procedures as identified in DA PAM 385-63 and Army Regulation AR 385-63.

3. The above reference (TRADOC Reg. 385-2) delegates waiver authority to General Officers commanding TRADOC installations to reduce the dimensions of Surface Danger Zones (SDZ) when terrain, artificial barriers, other barriers, or controlling factors make small danger zones safe.

4. Unit will fire Ammunition listed below:

a. 5.56mm Ball

4. THIS DOCUMENT IS AUTHORED BY:

8. COORDINATION/APPROVAL

S:

OFFICE	ACTION	NAME AND DATE	OFFICE	ACTION	NAME AND DATE
Range Ops	Concur	Bryant 4 Aug 15	DPTMS		
P Safety	Concur w/c	K. Edin 5 Aug 15	G3		
BDE CDR	concur	Reverett 11 Aug 15	CG		
AR CSM					
AR CMDT					

STAFF REMARKS: (Command Group Use Only)	APPROVAL AUTHORITY
	APPROVED:
	DISAPPROVED:
	NOTED:



DEPARTMENT OF THE ARMY
HEADQUARTERS, 2ND SQUADRON 16TH CAVALRY
199TH INFANTRY BRIGADE (LEADER DEVELOPMENT)
BLDG 5144, 13TH ARMORED REGIMENT ROAD
FORT BENNING, GA 31905

ATZK-SBB

20 July 2015

MEMORANDUM FOR RECORD

SUBJECT: Concept of Operation for Maertins Range; Armor Basic Officer Leader Course (ABOLC) Employment of Direct Fires Exercise

1. PURPOSE: The purpose of this range is to conduct Day and Night Direct Fire and Tactical Communication/Reporting Exercises at Maertins Range in order to train ABOLC students on the importance of target acquisition, direct fire employment, tactical communication, and reporting.

2. APPLICABILITY: This memorandum applies to all 2-16 CAV units/activities using Maertins Range. All Officers in Charge (OIC), Non-commission Officers in Charge (NCOIC) and Range Safety Officers (RSO) will be familiar with the contents of this memorandum and all other applicable references.

3. TRAINING OBJECTIVES: Weapons and ammunition used:

- a. M4, M16A4, M16A2; 5.56mm Ball, AA33, A059

4. REFERENCES:

- a. Army Regulation 385-63 and DA Pam 385-63, Range Safety
- b. Army Regulation 350-1, Army Training
- c. MCoE Regulation 350-19, Range and Terrain Regulation
- d. FM 3-23.30, Grenades and Pyrotechnic Signals
- e. TM 9-1300-206, Ammunition and Explosives Standards
- g. FM 3-22.9, M4 Rifle
- i. FM 3-20.98, Reconnaissance Scout Platoon

5. SCHEDULING: Each unit/activity scheduling Maertins will prepare and submit the following documents to Range Operations, DPTMS:

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a. DA Form 7566; Risk Management Worksheet, Which must be reviewed and approved by MCoE Safety.

b. FB Form 350-19-1-E-R, scenario, sketches, FB Form 144, and any specific enclosures as required.

c. Training guidelines: All training will be conducted IAW this memorandum and applicable references listed in paragraph 3 and FB 350-19-1-E-R. Units are responsible for developing and submitting a new range packet if requested training deviates from approved range packets. All deviations/waivers must be submitted through Range Operations for review and approval.

d. Units will use the Range Facility Management and Scheduling System (RFMSS) when scheduling Maertins.

6. ADMINISTRATIVE: The training unit shall clear the range IAW local policies and procedures established with Range Control. Units will be required to clean all buildings occupied during the training event. This will require that the unit supplies the following; brooms, mops, buckets, and appropriate cleaning supplies. Using units are responsible for clearing all brass and ammunition from the baseline and all firing lanes. Brass and ammunition are to be policed during daylight hours only. A red range flag will be provided to the using unit by Range Division personnel. The range flag will be displayed prior to live-fire training and must be returned to range support personnel prior to departing the range. Using units are responsible for providing a fire detail. These personnel will be used in case of a fire downrange. The OIC will ensure that the range is put into a self imposed check fire with Range Operations IAW MCoE Regulation 350-19 prior to moving downrange. All range fires will be suppressed prior to placing the range back into a hot status.

7. GENERAL: Maertins supports live fire exercises for individual and team known distance rifle training.

8. REQUIREMENTS: A specific operation 350-19-1-E-R/scenario package will be prepared by the units for Maertins and approved by the Chief, Range Operations. All supporting documents (i.e. regulations, field manuals, TM's, etc.) with an approved 350-1-E-R/scenario package will be onsite. All visiting personnel will also be directly controlled by the OIC/NCOIC. All personnel will be given range orientation/safety briefing, to include location of dud areas, medical procedures, loading and clearing weapons, misfire procedures, emergency cease fire signals, etc. prior to firing. Only weapons/ammunition listed on the approved FB Form 350-19-1-E-R/scenario package will be allowed on the range. Prior to and after training, an ammunition/weapons check will be made to ensure no individual or vehicle has any unauthorized ammunition/weapons. The using unit will ensure the range is cleared of all refuse generated (i.e. pallets, ammo boxes, and food packaging) prior to leaving the range. All

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SUBJECT: Concept of Operation for Maertins Range; Armor Basic Officer Leader Course (ABOLC) Employment of Direct Fires Exercise

units are responsible for damages to any structure, fixture, or equipment that is part of the range and will repair damages at their own expense. Any damage or malfunction must be reported in writing to the Chief, Range Operations. Approved hearing protection will be worn. Meals will only be served and consumed at the approved area. This area will be cleaned after use. A detailed briefing will be given by the OIC/RSO to all personnel prior to training at DMPRC. This briefing will include the FB 350-19-1-E-R/scenario package, daily risk management worksheet, and a detailed safety briefing. Hearing protection will be available on the range for everyone.

The RHTT Targets will be mapped to Maertins Range prior to execution. The area to be mapped will be between the pit berm and the 500 yard berm. Soldiers will not proceed past the 600 meter line. Lanes 6 thru 15 will be used for this event. Unit will abide by Policy Memo 385-63-10, Instillation Use of Steel Targets in Marksmanship Training, 3 Dec 2014.

9. MEDICAL: In the event of an accident, injury or illness, the OIC/RSO will immediately call a cease fire then call 911 using the standard 9 Line MEDEVAC to determine what type of evacuation is the most appropriate for the injury (loss of life, limb or eyesight). MEDEVAC will be IAW MCoE Regulation 350-19 and USAIC 40-2. Landing zone for MEDEVAC aircraft will be established prior to use and will be marked appropriately. Range Control will be notified in this event. The cease fire will remain in effect until cleared through Range Control. A Frontline Ambulance (FLA) with qualified medics will be present throughout the duration of the training exercise and will be located IAW Commander/OIC guidance and not adjacent to the mess area. The emergency cease fire signal and E-911 MEDEVAC procedures will be briefed during the range safety brief.

10. INCIDENT: When an incident occurs on the range, regardless of injury or not, the OIC/RSO will immediately call a cease fire and report it to Range Control and the using unit's higher headquarters, and MCoE Safety IAW AR 385-10. OIC/RSO will take action as directed by Range Control. The cease fire will remain in effect until the problem is resolved and cleared through Range Control. If the incident results in an injury, the OIC/RSO will use the procedures outlined in the medical paragraph. The following information will be furnished by the OIC/RSO to Range Control:

- a. Designation of unit.
- b. Range and location
- c. Type of weapon involved.
- d. Type of ammunition involved.
- e. Brief summary of what happened.
- f. Personnel injuries and extent.
- g. Full Name, SS#, Rank and unit of injured personnel.
- h. Extent of property damage.
- i. Intentions regarding an AR 15-6 investigation.

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11. VEHICLE CONTROL: No Personally Owned Vehicles (POVs) are authorized downrange. All POVs are to be parked in areas designated by range personnel on Maertins. The speed limit on the range is 5 mph. No parking is allowed in front of the range control buildings, anywhere downrange, or in front of any building on the range. Administrative vehicles may be used to deliver rations to the mess area but will be moved immediately after the meal is finished and the area has been properly cleaned.

12. FREQUENCIES: Communications on Maertins Range will consist of two LMR radio channels.

- a. Admin Net: Primary: LMR Channel 2-16 A Troop-CMD
- b. Range Control: Primary: LMR Channel 2-26 RNG-CTL

13. AMMUNITION POINT: There is an ammunition point provided for draw/turn in. No open flames will be allowed within 50 feet of the ammunition pad. Two 10 pound bicarbonate fire extinguishers will be available at all times located on the ammunition pad. Ammunition Non-Commissioned Officer (NCO) will be Ammo Handler certified and will control the issue of live ammunition. Ammunition will be monitored at all times. All ammunition will be issued by, turned in to, and logged by the Ammunition NCO.

14. OPENING OF THE RANGE: Tasks for opening the range and occupying the site:

a. The unit will have in its possession the approved 350-19-1-E-R, operational overlays, this memorandum, approved RFMSS request summary, unit risk assessment worksheet signed by the appropriate risk level authority, and a daily risk assessment required before live fire execution on Maertins. The OIC will call range control via LMR and request permission to occupy the range complex. Appropriate overlays will be posted upon arrival. The OIC and RSO will then receive a briefing from the range site supervisor.

b. The unit will maintain FM communications with Range Control at all times.

c. The unit OIC or representative will verify the scenario data at the range complex is correct.

d. Students will take all commands from the controlling element and will not load weapons until ordered to do so.

e. Unit will proof the range before firing.

f. Unit leadership must assign personnel to perform special duties such as road guards and fire fighting details IAW this guide, FB Form 350-19-1-E-R guard listing, and applicable Fort Benning regulations.

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15. CONDUCT OF THE EXERCISE: Tasks for conducting the exercise follow.

a. The OIC controls the exercise, maintains efficient throughput, and maintains required communications.

b. The NCOIC supervises all details and controls the movement of vehicles and personnel.

c. The RSO ensures that personal handle misfires IAW safety regulations, observes for any safety violations. The Safety NCO will clear each rifle at the end of each training exercise.

d. The OIC ensures that the range adheres to the appropriate scenario being fired, that students have zeroed correctly, conducts onsite remedial training as needed, helps safety personnel clear weapons when required, helps maintenance personnel identify and correct malfunctions, and augments training as necessary.

16. EXECUTION OF THE EXERCISE:

Scenario 1 - Day Movers 100-200 Yards:

1. Students will receive RHTT capabilities brief, safety considerations brief, and Scenario 1 brief from OIC and RSO.
2. 10 Students will occupy firing line, 1 Student per lane, 1 Safety per two lanes, and will utilize lanes 6-15. Lanes 6-10 will engage targets directly in front of them in their lanes only in RHTT EA West and lanes 11-15 will engage targets directly in front of them in their lanes only in RHTT EA East.
3. One Squad (5) RHTT will be mapped to Patrol the RHTT EA West, and One Squad (5) RHTT will be mapped to Patrol the RHTT EA East.
4. Line Safety will give the verbal command "Line is Hot" signaling Students to begin Direct Fire Control Measures and Engagement Techniques.
5. Once RHTT Targets are Engaged, RHTT Squads will successively bound North from the 800 YD FL to the 900 YD FL. If RHTT targets are still active at the 900 YD FL, RHTT squads will break contact and displace south to the 800 YD FL by means of successive bound.
6. Upon completion of Scenario 1, (targets displaced to the 800 YD FL or destroyed) Line Safety will give the verbal command of "Line is Cold" signaling Students to lock and clear for Lane Safety Verification.
7. Scenario 1 will repeat until all Students have completed the exercise at least once.

Scenario 2 - Night Movers 100-200 Yards

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SUBJECT: Concept of Operation for Maertins Range; Armor Basic Officer Leader Course (ABOLC) Employment of Direct Fires Exercise

1. Students will complete Scenario 1 before beginning Scenario 2. Scenario 2 will mirror Scenario 1 but will be executed with the AN/PEQ-15 Laser Aiming Device and AN/PVS-14 Night Vision Device.
2. 10 Students will occupy firing line, 1 Student per lane, 1 Safety per two lanes, and will utilize lanes 6-15. Lanes 6-10 will engage targets directly in front of them in their lanes only in RHTT EA West and lanes 11-15 will engage targets directly in front of them in their lanes only in RHTT EA East.
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6. Upon completion of Scenario 2, (targets displaced to the 800 YD FL or destroyed) Line Safety will give the verbal command of "Line is Cold" signaling Students to lock and clear for Lane Safety Verification.

Gate Scenario - Displacing Enemy Squad 100-300Yds

1. Student will receive Range safety brief, and Gate Scenario brief from OIC and RSO.
2. 1 Student will occupy lane 10, 1 Safety will supervise the Student. Only lane 10 will be used and Student will engage targets directly in front of them in their lane only in RHTT EA South.
3. One Squad (5) RHTT will be mapped to Patrol the RHTT EA South.
4. Line Safety will give the verbal command "Line is Hot" signaling Student to begin Direct Fire Control Measures and Engagement Techniques.
5. Once RHTT Targets are Engaged, RHTT Squad will displace South from the 900 YD FL to the 700 YD FL
6. Upon completion of Gate Scenario, (targets displaced to the 700 YD FL or destroyed) Line Safety will give the verbal command of "Line is Cold" signaling Students to lock and clear for Lane Safety Verification.

17. CLOSURE OF THE RANGE:

a. The OIC notifies range control that firing has terminated, reports number of personnel trained and rounds expended by DODIC, debriefs unit personnel, and ensures that the clearing of the range and training areas is completed to local regulations and SOP standards.

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SUBJECT: Concept of Operation for Maertins Range; Armor Basic Officer Leader Course (ABOLC) Employment of Direct Fires Exercise

b. The NCOIC supervises ammunition and target details and ensures that range facilities have been policed.

c. The ammunition NCO ensures that only authorized personnel remove munitions from the range and prepares the residue documentation required by the ammunition supply point.

18. SAFETY:

a. Uniform will be IAW unit SOP

b. Ammo NCO will guard ammunition stored at the ammunition holding area (AHA) off the firing line and control its issue/turn-in, keeping it guarded at all times.

c. Combat lifesaver will be onsite at all times with a dedicated vehicle clearly marked and will provide overhead cover.

d. Weapons will be cleared by visual inspection on and off the firing line by the RSO after the last engagement.

e. Weapons will be on safe when not engaging targets.

f. Signals to load, fire, and clear weapon systems will be controlled by the OIC, NCOIC, or a designated unit representative via verbal communications.

g. Anyone on the range observing an unsafe act can call a ceasefire by using FM comms, hand and arm signals, or a vocal command of ceasefire.

h. Students will receive the required amount of ammo.

i. All unused ammunition will be turned into the AHA upon completion of firing.

j. The unit will follow 9 line MEDEVAC procedures for serious injuries.

k. Hearing and eye protection will be worn during training

l. If wildlife enters the range, the unit will come to a cease fire and notify Range Control for permission to remove the wildlife from the area.

m. When a weapon or ammunition malfunction is experienced, the OIC/RSO will suspend all firing and immediately notify Range Control. The weapons and all components and ammunition involved will remain in place. The cease fire will remain in effect until cleared through Range Control. An investigation is required and will be conducted by the ammunition and weapons inspection personnel and DOL.

19. POINT OF CONTACT: The point of contact for this memorandum is SFC Adam Paich, 2-16 Cavalry Master Gunner, 199th Infantry Brigade, at 706-626-8324 or adam.paich.mil@mail.mil.



DENNIS R. ATKINS III

LTC, AR

Commanding



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

05 August 2015

MEMORANDUM FOR Commander, 2/16th CAV., Attn: SFC Adam Paich, Bldg 5144,
13th Armored Regiment Road, Fort Benning, GA 31905

SUBJECT: 2-16th CAV (ABOLC) BRM Live Fire with Robotic Human Type Target
(RHTT) on Meartens Range Scenario and DRAW Review

1. References.

- a. Army Regulation 385-10, The Army Safety Program, 27 November 2013
- b. Army Regulation 385-63, Range Safety, 30 January 2012
- c. Department of the Army Pamphlet 40-501, Hearing Conservation Program, 10 December 1998
- d. Department of the Army Pamphlet 385-10, Army Safety Program, RAR 19 January 2010
- e. Department of the Army Pamphlet 385-30, Mishap Risk Management, 02 December 2014
- f. Department of the Army Pamphlet 385-63, Range Safety, 16 April 2014
- g. Army Techniques Publication 5-19, Risk Management, 14 April 2014
- h. MCoE Regulation 350-19, Range and Terrain Regulation, 01 March 2013
- i. MCoE Policy Memorandum 385-6-1, Risk Management, 30 October 2014

2. Document received on 05 August 2015.

3. Concur w/comment.

a. DRAW, Block 2, pg. 1. The effective start and end dates must be formatted on the document in the following manner: "DD/MM/YYYY – DD/MM/YYYY".

b. DRAW, Blockd 6 & 9, pg. 5. "Ricochet by Another Soldiers Bullet", the end state of a direct or indirect fired munition is similar. The risk level is similar to that of a

ATZB-SO

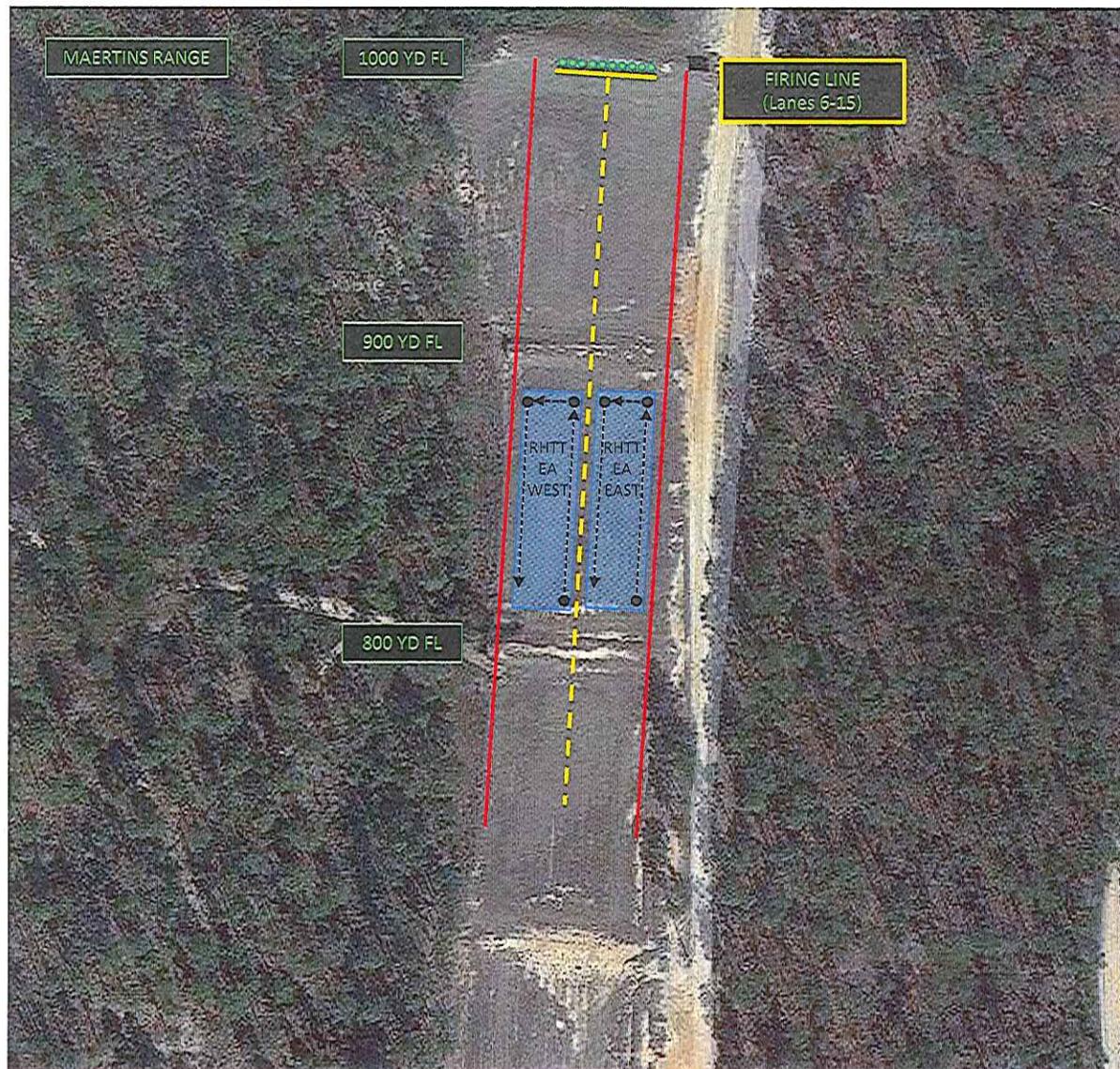
SUBJECT: 2-16th CAV (ABOLC) BRM Live Fire with Robotic Human Type Target (RHTT) on Meartens Range Scenario and DRAW Review

negligent discharge hazard, therefore the constant is the damage caused by small arms munitions.

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

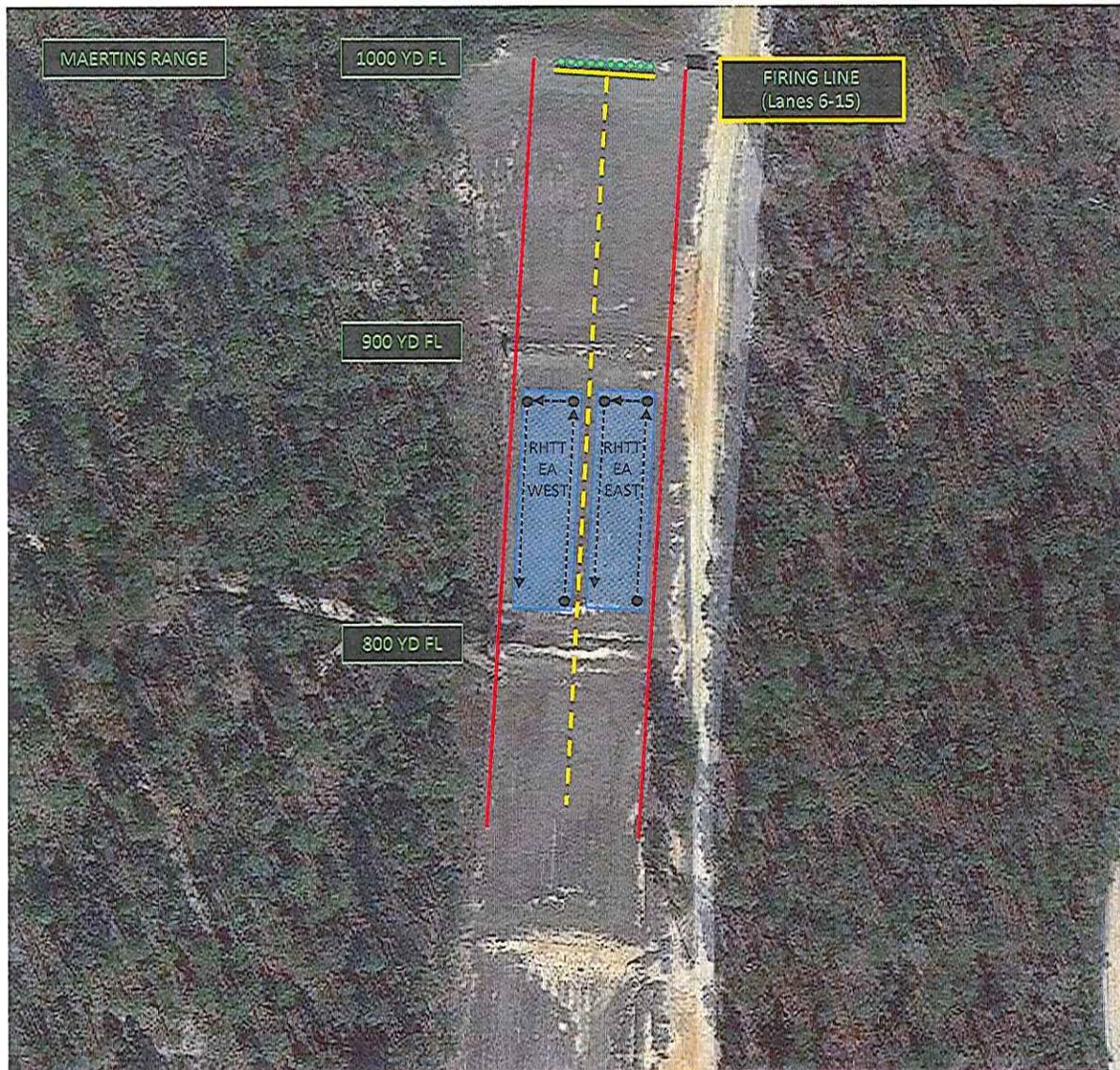
Encl


JILL E. CARLSON
Director, MCoE/USAG Safety



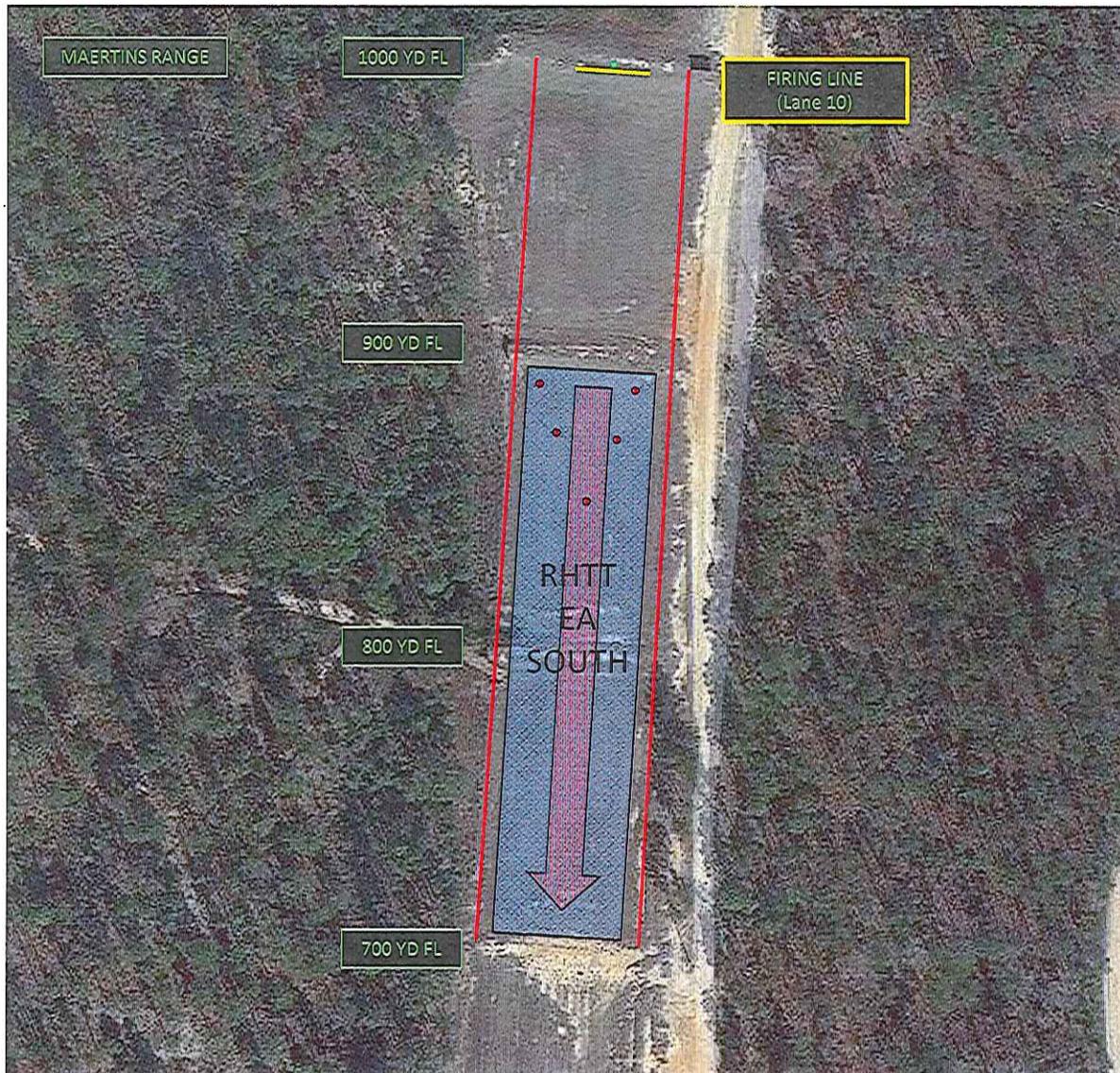
Scenario 1 - Day Movers 100-200 Yards

- Students will receive RHTT capabilities brief, safety considerations brief, and Scenario 1 brief from OIC and RSO.
- 10 Students will occupy firing line, 1 Student per lane, 1 Safety per two lanes, and will utilize lanes 6-15. Lanes 6-10 will engage targets directly in front of them in their lanes only in RHTT EA West and lanes 11-15 will engage targets directly in front of them in their lanes only in RHTT EA East.
- One Squad (5) RHTT will be mapped to Patrol the RHTT EA West, and One Squad (5) RHTT will be mapped to Patrol the RHTT EA East.
- Line Safety will give the verbal command "Line is Hot" signaling Students to begin Direct Fire Control Measures and Engagement Techniques.
- Once RHTT Targets are Engaged, RHTT Squads will successively bound North from the 800 YD FL to the 900 YD FL. If RHTT targets are still active at the 900 YD FL, RHTT squads will break contact and displace South to the 800 YD FL by means of successive bound.
- Upon completion of Scenario 1, (targets displaced to the 800 YD FL or destroyed) Line Safety will give the verbal command of "Line is Cold" signaling Students to lock and clear for Lane Safety Verification.
- Scenario 1 will repeat until all Students have completed the exercise at least once.



Scenario 2 - Night Movers 100-200 Yards

- Students will complete Scenario 1 before beginning Scenario 2. Scenario 2 will mirror Scenario 1 but will be executed with the AN/PEQ-15 Laser Aiming Device and AN/PVS-14 Night Vision Device.
- 10 Students will occupy firing line, 1 Student per lane, 1 Safety per two lanes, and will utilize lanes 6-15. Lanes 6-10 will engage targets directly in front of them in their lanes only in RHTT EA West and lanes 11-15 will engage targets directly in front of them in their lanes only in RHTT EA East.
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- Upon completion of Scenario 2, (targets displaced to the 800 YD FL or destroyed) Line Safety will give the verbal command of “Line is Cold” signaling Students to lock and clear for Lane Safety Verification.



Gate Scenario - Displacing Enemy Squad 100-300Yds

- Student will receive Range safety brief, and Gate Scenario brief from OIC and RSO.
- 1 Student will occupy lane 10, 1 Safety will supervise the Student. Only lane 10 will be used and Student will engage targets directly in front of them in their lanes only in RHTT EA South.
- One Squad (5) RHTT will be mapped to Patrol the RHTT EA South.
- Line Safety will give the verbal command “Line is Hot” signaling Student to begin Direct Fire Control Measures and Engagement Techniques.
- Once RHTT Targets are Engaged, RHTT Squad will displace South from the 900 YD FL to the 700 YD FL
- Upon completion of Gate Scenario, (targets displaced to the 700 YD FL or destroyed) Line Safety will give the verbal command of “Line is Cold” signaling Students to lock and clear for Lane Safety Verification.

Meartens, 199th, 2-16th CAV, Log# 7-6-15 ROADBLOCK LIST , 29 July 15

BLOCK	GRID	LOCATION	TYPE
A-1	911 792	Across firebreak 200m down Fiske Range at right end of KD berm. Permanently closed.	Cable
A-2	910 783	Off Sightseeing Rd on unnamed trail opposite of entrance to LRC.	Gate
A-4	925 766	Off Sunshine Rd 1,200 m W. of entrance to Grandstaff range.	Gate
A-5	936 762	Across entrance road to Grandstaff Range. 10m N. of Sunshine Rd.	Gate
A-6	939 763	Off Sunshine Rd 100m W. of Oswichee Creek. Permanently closed.	Cable/ Berm
A-8	968 740	Across unnamed trail 30m N. of Sunshine Rd and 800m N.W. of entrance to Griswold Range.	Gate
A-10	018 730	Across entrance road to Flint Range. 50m N. of Sunshine Rd.	Gate
A-11	019 731	Across Lumpkin Trail 30m N. of its intersection with Sunshine Rd.	Gate
A-11A	032 729	Rd guard pos # 2 for Garnsey Rng Obj 'E' (intersection Jamestown/Sunshine Rd's	Rd Grd # 2
A-12	033 742	Across Garnsey Rd 50m W. of its intersection with Jamestown Rd.	Gate
A-12A	029 744	Across Garnsey Rd 400m W. of A-12 Roadblock.	Gate
A-12B	028 741	Across trail 150m SW of A-12A Roadblock. 50m W. of Range Bldg.	Gate
A-12C	036 746	Road guard position # 3 for Garnsey Rng Objective 'E' (Jamestown at Lightning Rd)	Road Guard # 3
A-13	936 762	Across Sunshine Rd 10m E. of the entrance to Grandstaff Range. (Road guard location)	Gate
A-14	974 733	Across Sunshine Rd 10m W. of the entrance to Griswold Range. (Road guard location)	Gate
A-15	021 799	Across entrance road to Buchanan Range.	Gate
A-15A	021 798	Gate Across Good Luck Rd	Gate
A-15B	022 796	Road guard position # 1 for Garnsey Rng Objective 'E' (Jamestown road SW corner of Engineer building)	Road Guard # 1
A-18	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	973 825	Across entrance road to Patton Range 400m S. of its intersection with 1st Div Rd.	Gate
A-20	974 827	Across entrance road to Dianda Range. 300m S. its intersection with 1st Div Rd.	Gate
A-22	015 817	Across unnamed trail 50m N. of Brinson Range and 10m off Jamestown Rd.	Gate
A23	983 756	Across Lumpkin Trail 200m E. of Griswold Range	Gate
A-23A	005 748	On Lumpkin trail 50m NW of Objective 'E' on Garnsey Range.	Gate
A-23B	005 747	Adjacent to A-23A gate on trail near intersection of Lumpkin trail	Install Gate
A-24	015 811	10m inside entrance gate of Brinson Rng south of entrance road.	Gate
A-25	016 789	Across fire break 10m W. of its intersection with Good Luck Rd.	Gate
A-26	013 798	On L/S of Buchanan Range 50 meters W. of chow area across entrance to fire break.	Cable
A-27	018 805	Across unnamed trl 175m N of intersection of Hourglass and Jamestown roads	Gate

BLOCK	GRID	LOCATION	TYPE
A-28	012 774	20 meters off Yankee road on south side of Galloway range.	Gate
A-28A	011 776	30 meters south of Range Tower	Gate
A-30	026 758	Across fire break leading to Garnsey Range. 140m SW of Brann Flat Range.	Gate
A-30A	027 758	Across trail leading to Garnsey Range 50m E. of A-30 Roadblock	Gate
A-31	020 745	Across fire break leading to Brann	Cable
A-32	989 724	Across entrance road to Kunzig Range.	Gate
A-33	974 734	Across entrance to Griswold Range.	Gate
A-33A	979 739	150 meters west of Target Systems bldg on trail leading to move to contact site	Gate
A-33B	982 739	20m N of Target Sys bldg on trail running on west side of bldg.	Install Gate
A-34	947 760	Across entrance to Minter Hill 700m E. of Oswichee Creek.	Gate
A-38	952 816	Across fire break 300m down range of firing line on Red Cloud Range on L. side of range.	Cable
A-39	956 822	Across unnamed trail 100m S. of bldgs on Buckner Range on L. side of range	Cable
A-40	967 823	Across fire break 50m down range on the left side of Pierce Range.	Gate
A-41	972 820	Across fire break located on the right side of the firing line on Patton Range.	Cable
A-42	978 820	Across fire break located on the left side of the firing line on Patton Range.	Cable
A-43	983 823	Across fire break located on the right side of the firing line on Patton Range.	Cable
A-44	986 823	Across fire break from L. of the firing line on Patton Range.	Gate
A-45	990 827	Across fire break located on the right side of the firing line on Duke Range.	Gate
A-45A	991 829	Across Booker Breach site entrance road 200m past Duke Rng entrance gate	Gate
A-46	984 832	Across unnamed trail 100m W. of the intersection of 1st Div Rd and Ivy Rd.	Gate
A-47	990 833	Across unnamed trail 500m W. of the intersection with 1st Div & Buckeye Rd's	Gate
A-48	995 827	Across fire break located on the right side of the firing line on Porter Range.	Cable
A-49	998 827	Across fire break located on the left side of the firing line on Porter Range.	Cable
A-50	000 830	Across unnamed trail 200m W. of entrance to Maertens Range.	Gate
A-51	031 791	Barrier on Furman Rd	Barrier 1
A-52	034 776	Barrier on Yankee Rd	Barrier 2
A-53	035 776	Gate to Cole Range	Barrier 3
A-54	046 749	Barrier off Lightning Rd on unnamed trail	Barrier 5
A-55	057 759	Barrier off Lightning Rd on unnamed trail	Barrier 4

DELIBERATE RISK ASSESSMENT WORKSHEET

1. MISSION/TASK DESCRIPTION Maertins Range Employment of Direct Fire with RHTT Exercise Packet			2. DATE (DD/MM/YYYY) 07/20/2015		
3. PREPARED BY					
Ridgway, Cameron		b. Rank/Grade 03 / CPT		c. Duty Title/Position Squadron Operations Officer	
d. Unit 2-16 TH CAVALRY SQUADRON		e. Work Email Cameron.l.ridgway.mil@mail.mil		f. Telephone (DSN/Commercial (Include Area Code)) 706-626-8333	
g. UIC/CIN (as required) W6NFN1 / ATZK-SBB		h. Training Support/Lesson Plan or OPORD (as required) ABOLC POI		i. Signature of Preparer	
Five steps of Risk Management: (1) Identify the hazards (2) Assess the hazards (3) Develop controls & make decisions (4) Implement controls (5) Supervise and evaluate (Step numbers not equal to numbered items on form)					
4. SUBTASK/SUBSTEP OF MISSION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
M110/XM2010 FIELD FIRE MOVERS (DAY AND NIGHT)	RANGE/SITUATIONAL AWARENESS	H	THE OIC AND RSO WILL DO THE FOLLOWING: 1. READ AND REIVEW THE RISK ASSESSMENT.	How: OIC / RSO (SEE MEMO) Who: MCOE REG 350-19	M
			2. ENSURE CADRE COMBAT LIFESAVER, CLS BAG, AND A DEDICATED EVAC VEHICLE ARE AVAILABLE.	How: MCOE PM 385-6-14 Who:	
			3. IDENTIFY SOLDIERS WITH MEDICAL PROBLEMS HAVING THE POTENTIAL TO IMPACT TRAINING TO	How: AR 385-63 Who:	
			INCLUDE MINOR ILLNESS, ALLERGIES, PREVIOUS HOT AND COLD WEATHER INJURIES, OR	How: 2-16 RANGE OPS SOP Who:	
			ENVIROMENTAL SENSITIVITIES.	How: RANGE SAFETY BRIEF Who:	
Additional entries for items 4 through 9 are provided on pages 2-5.					
10. OVERALL RESIDUAL RISK LEVEL (All controls implemented):					
<input type="checkbox"/> EXTREMELY HIGH <input type="checkbox"/> HIGH <input type="checkbox"/> MEDIUM <input type="checkbox"/> LOW					
11. OVERALL SUPERVISION PLAN AND RECOMMENDED COURSE OF ACTION					
<input type="checkbox"/> <input type="checkbox"/>					
12. APPROVAL OR DISAPPROVAL OF MISSION OR TASK <input checked="" type="checkbox"/> APPROVE DISAPPROVE					
a. Name (Last, First, Middle Initial) ATKINS, DENNIS R. III		b. Rank/Grade LTC/O-5	c. Duty Title/Position Commander, AR		d. Signature of Approval Authority 
e. Additional Guidance:					

DELIBERATE RISK ASSESSMENT WORKSHEET

4. SUBTASK/SUBSTEP OF MISSION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
			4. REVIEW EVACUATION PROCEDURES AND REPORTING PROCEDURES FOR SERIOUS INCIDENTS.	How: Who:	
			PLAN EVACUATE SOLDIERS WITH ALLERGIC REACTIONS, ANYONE WITHIN 25 M OF LIGHTNING STRIKES,	How: Who:	
			SNAKE BITES, OR ANYONE SHOWING SYMPTOMS BEYOND THE COMBAT LIFE SAVERS ABILITY TO TREAT,	How: Who:	
			THE OIC/RSO WILL DIRECT AN AIR MEDEVAC WHEN THE DANGER OF LOSS OF LIFE, LIMB, OR EYESIGHT.	How: Who:	
	ACCIDENTAL/NEGLIGENT DISCHARGE	H	1. INSTRUCTOR WILL GIVE A SAFETY BRIEFING.	How: MCOE REG 350-19	M
			2. INSTRUCTORS WILL ENSURE ALL WEAPONS ARE CLEARED PRIOR TO LEAVING THE RANGE	How: FM 5-19 Who:	
			3. OIC WILL ENSURE THAT QUALIFIED COMBAT LIFE SAVERS ARE ON SITE.	How: IAW AR 385-63	
	SOLDIER INJURED BY BULLET FROM ANOTHER SOLDIER FIRING	H	1. INSTRUCTORS WILL ENSURE THAT SOLDIERS ARE IN TEAMS TO DOUBLE CHECK ALL SAFETY PROCEDURES.	How: 2-16 RANGE OPS SOP Who: SHOOTER/SPOTTER/OIC / RSO	M
				How: RANGE SAFETY BRIEF Who: (SEE MEMO)	
	SOLDIER LOSS OF HEARING DUE TO NO HEARING PROTECTION	M	1. EVENT OIC/RSO WILL ENSURE THAT A SAFETY BRIEFING IS GIVEN AND HEARING PROTECTION IS AVAILABLE AND USED	How: MCOE REG 350-19 Who: BUDDY TEAM / OIC / RSO	L
				How: ATP 5-19 Who:	
				How: AR 385-63 Who:	
				How: MCOE REG40-14 Who:	

DELIBERATE RISK ASSESSMENT WORKSHEET

	HEAT ILLNESS SUFFERED BY SOLDIER	H	1. EVENT OIC AND EVENT NCO'S WILL MONITOR THE TEMPETURE ANS SOLDIERS CONDITION THROUGHOUT TRAINING.	How: MCOE REG 40-14 Who: BUDDY TEAM / OIC / RSO	M
				How: Who:	
			2. THE EVENT OIC WILL MAKE SURE THE STUDENTS ARE CONSUMING FLUIDS ON BREAKS AND AS NEEDED	How: Who:	
			3. EVENT OIC WILL DIRECT UNIFORM MODIFICATIONS AS NEEDED.	How: Who:	
			4. EVENT OIC WILL FOLLOW FB FORM 7 TO CONDUCT TRAINING IN HEAT CATEGORY 2 THROUGH 5.	How: Who:	
			5. INSTRUCTORS WILL CONDUCT MAN DOWN REHEARSAL DRILL USING ICE SHEETS ONCE A MONTH DURING SUMMER MONTHS.	How: Who:	
			6. INSTRUCTORS WILL IDENTIFY STUDENTS WITH PROIR HEAT INJURIES PRIOR TO THE START OF TRAINING.	How: Who:	
			7. INSTRUCTORS WILL MONITOR AND RECORD HEAT CATS WITH KESTRAL DEVICE AND GET HOURLY UPDATES FROM ALPHA BASE.	How: Who:	
	COLD ILLNESS SUFFERED BY SOLDIER	M	1. INSTRUCTORS WILL MONITOR THE TEMPETURE AND SOLDIER CONDITIONS THROUGH OUT THE EVENT	How: MCOE REG 350-19 Who: BUDDY TEAM / OIC / RSO	L
			2. EVENT OIC WILL ENSURE THAT FLUIDS ARE CONSUMED AT REST, BREAKS AND AS NEEDED.	How: ATP 5-19 Who: (SEE MEMO)	
			3. BURN BARRELS WILL BE USED AS NEEDED	How: AR 385-63 Who:	
			4. EVENT OIC WILL FOLLOW FB FORM 42 TO CONDUCT TRAINING AT TEMPATURES 50F AND BELOW.	How: MCOE REG 40-14 Who:	
			5. INSTRUCTORS WILL IDENTIFY PRIOR COLD WEATHER INJURIES PRIOR TO TRAINING.	How: Who:	

DELIBERATE RISK ASSESSMENT WORKSHEET

	ANIMAL / INSECT BITES SUFFERED BY SOLDIER	M	1. INSTRUCTORS WILL IDENTIFY TEAMS WITH ALLERGIES PRIOR TO THE START OF THE EVENT.	How: MCOE REG 350-19 Who: INDIVIDUAL / OIC / RSO	L
			2. EVENT OIC WILL GIVE A SAFETY BRIEF WHICH IDENTIFIES POSSIBLE WILDLIFE DANGERS.	How: FM 5-19 Who: (SEE ATTACHED MEMO)	
				How: AR 385-63 Who:	
				How: 2-16 RANGE OPS SOP Who:	
	SOLDIER STRUCK BY LIGHTING	M	1. EVENT OIC WILL GIVE A DETAILED SAFETY BRIEF ON SEVERE WEATHER PROCEDURES IF THERE IS A	How: MCOE REG 350-19 Who: OIC / RSO	L
			CHANCE OF A STORM DURING TRAINING	How: FM 5-19 Who: (SEE ATTACHED MEMO)	
			2. ALL SAFETY PERSONNEL WILL PRACTICE WEATHER EVACUATION AND MEDICAL PROCEDURES QUARTERLY	How: AR 385-63 Who:	
			3. EVENT OIC WILL ENSURE THAT THE CLS IS PRESENT PROIR TO THE START OF THE EVENT.	How: 2-16 RANGE OPS SOP Who:	
			4. EVENT OIC WILL IDENTIFY SEVERE WEATHER SAFE AREAS DURING THE SAFETY BRIEFING.	How: Who:	
			5. ALL TRAINING WILL CEASE UPON RECIEPT OF SEVER WEATHER FROM RANGE CONTROL OR IF LIGHTNING	How: Who:	
			CAN BE SEEN WITHIN 5 MILES.	How: Who:	
	FIRE AT AMMO POINT OR ON RANGE	M	1. AMMO NCO WILL ENSURE THERE IS NO SMOKING WITHIN 50 FEET OF THE AMMO POINT.	How: MCOE REG 350-19 Who: OIC / RSO	L
			2. AMMO NCO WILL ENSURE THERE ARE 2 10LB. FIRE EXTINGUISHERS AVAILABLE AT THE AMMO POINT	How: FM 5-19 Who: (SEE MEMO)	
				How: AR 385-63 Who:	
				How: 2-16 RANGE OPS SOP Who:	

DELIBERATE RISK ASSESSMENT WORKSHEET

4. SUBTASK/SUBSTEP OF MISSION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
	RIOCHET BY ANOTHER SOLDIERS BULLET	M	LANES WILL BE CHECKED FOR RIOCHET HAZARDS BEFORE TRAINING, AND ALL SOLDIERS WILL BE BRIEFED	How: MCOE REG 350-19 Who: OIC / RSO	L
			HAZARDS DURING SAFETY BRIEF.	How: ATP 5-19 Who: (SEE ATTACHED MEMO)	
			THE OIC/RSO WILL ATTEMPT TO CLEAR HAZARDS PRIOR TO TRIANING AND IF THE HAZARD CAN NOT BE CLEARED	How: AR 385-63 Who:	
			THEN LANE OR LANES WILL NOT BE USED. SOLDIERS WILL CEASE-FIRE IF AIRCRAFT ENTER ZONE AND	How: 2-16 RANGE OPS SOP Who:	
			WILL BE BRIEFED ONLY TO FIRE AT TARGETS IN THEIR LANE AND NOT FIRE AT ANYTHING THAT MAY	How: Who:	
			DEFLECT THE TRAJECTORY OF THE ROUNDS. EAR AND EYE PRO WILL BE WORN	How: Who:	
			WHILE IN THE PIT AREA ALL COMMANDS WILL BE GIVEN BY THE TARGET PIT NCOIC/ INSTRUCTOR	How: Who:	
			WHILE IN THE PIT AREA, ALL SOLDIERS TO INCLUDE INSTRUCTORS WILL REMAIN AS CLOSE TO THE	How: Who:	
			TARGET PIT WALL AS POSSIBLE FOR PROTECTION WHILE LIVE FIRING IS BEING CONDUCTED.	How: Who:	
			RADIO COMMUNICATIONS WITH THE TARGET PIT AND THE FIRING LINE WILL BE ESTABLISHED PRIOR TO	How: Who:	
			CONDUCTING LIVE FIRE AND WILL BE MAINTAINED AT ALL TIMES.	How: Who:	
CIVILIAN SPECTATORS	LOSS OF HEARING DUE TO NO HEARING PROTECTION	M	1. EVENT OIC / RSO WILL ENSURE THAT A SAFETY BRIEFING IS GIVEN AND HEARING PROTECTION IS PROVIDED.	How: MCOE REG 350-19 Who: OIC / RSO	L
				How: FM 5-19 Who: (SEE ATTACHED MEMO)	
				How: AR 385-63 Who:	
	ANIMAL / INSECT BITES	M	1. INSTRUCTORS WILL IDENTIFY TEAMS WITH ALLERGIES PRIOR TO THE START OF THE EVENT.	How: MCOE REG 350-19 Who: INDIVIDUAL / OIC / RSO	L

DELIBERATE RISK ASSESSMENT WORKSHEET

			2. EVENT OIC WILL GIVE A SAFETY BRIEF WHICH IDENTIFIES POSSIBLE WILDLIFE DANGERS.	How: ATP 5-19 Who:	
				How: AR 385-63 Who:	
				How: 2-16 RANGE OPS SOP Who:	

DELIBERATE RISK ASSESSMENT WORKSHEET

DELIBERATE RISK ASSESSMENT WORKSHEET

Risk Assessment Matrix		Probability (expected frequency)				
		Frequent: Continuous, regular, or inevitable occurrences	Likely: Several or numerous occurrences	Occasional: Sporadic or intermittent occurrences	Seldom: Infrequent occurrences	Unlikely: Possible occurrences but improbable
Severity (expected consequence)		A	B	C	D	E
Catastrophic: Death, unacceptable loss or damage, mission failure, or unit readiness eliminated	I	EH	EH	H	H	M
Critical: Severe injury, illness, loss, or damage; significantly degraded unit readiness or mission capability	II	EH	H	H	M	L
Moderate: Minor injury, illness, loss, or damage; somewhat degraded unit readiness or mission capability	III	H	M	M	L	L
Negligible: Minimal injury, loss, or damage; little or no impact to unit readiness or mission capability	IV	M	L	L	L	L

Legend:

EH – extremely high risk H – high risk M – medium risk L – low risk

13. RISK ASSESSMENT REVIEW 5HTXLUNG ZKHQ DVVHVVPHQW DSSOLHV IIR RQJR.QJ RSHUDYLRQV RUDFYLQJHV

a. Date	b. Last Name	c. Rank/Grade	d. Duty Title/Position	e. Signature of Reviewer

14. FEEDBACK AND LESSONS LEARNED

15. ADDITIONAL COMMENTS OR REMARKS

DELIBERATE RISK ASSESSMENT WORKSHEET

Instructions for Completing DD Form 2977, "Deliberate Risk Assessment Worksheet"

<p>1. Mission/Task Description: Briefly describe the overall Mission or Task for which the deliberate risk assessment is being conducted.</p>	<p>10. Overall Risk After Controls are Implemented: Assign an overall residual risk level. This is the highest residual risk level (from block 9).</p>
<p>2. Date " OO <<<< : Self Explanatory.</p>	<p>11. Supervision Plan and Recommended Course of Action: Completed by preparer. Identify specific tasks and levels of responsibility for supervisory personnel and provide the decision authority with a recommend course of action for approval or disapproval based upon the overall risk assessment.</p>
<p>3. Prepared By: Information provided by the individual conducting the deliberate risk assessment for the operation or training . Legend: UIC = Unit Identification Code; CIN = Course ID Number; OPORD = operation order; DSN = defense switched network; COMM = commercial</p>	<p>12. Approval/Disapproval of Mission/Task: Risk approval authority approves or disapproves the mission or task based on the overall risk assessment, including controls, residual risk level, and supervision plan. Space provided for authority to provide additional guidance; use continuation page if needed.</p>
<p>4. Sub-task/Sub-Step of Mission/Task: Briefly describe all subtasks or substeps that warrant risk management.</p>	<p>13. Risk Assessment Review: Should be conducted on a regular basis. Reviewers should have sufficient oversight of the mission or activity and controls to provide valid input on changes or adjustments needed. If the residual risk rises above the level already approved, operations should cease until the appropriate approval authority is contacted and approves continued operations.</p>
<p>5. Hazard: Specify hazards related to the subtask in block 4.</p>	<p>14. Feedback and Lessons Learned: Provide specific input on the effectiveness of risk controls and their contribution to mission success or failure. Include recommendations for new or revised controls, practicable solutions, or alternate actions. Submit and brief valid lessons learned as necessary to persons affected.</p>
<p>6. Initial Risk Level: Determine probability and severity. Using the risk assessment matrix (page 3), determine level of risk for each hazard specified. probability, severity and associated Risk Level; enter level into column.</p>	<p>15. Additional Comments or Remarks: Preparer provides additional comments, remarks, or information to support the risk assessment. If block 15 is used as a continuation of block 14, strike through the block number and title.</p>
<p>7. Control: Enter risk mitigation resources/controls identified to abate or reduce risk relevant to the hazard identified in block 5.</p>	<p>Additional Guidance: Block 4-9 continuance page may be reproduced as necessary for processing of all subtasks/ substeps of the mission/task. If a complete page is not utilized, write "NOTHING FOLLOWS" on the first unused row, immediately after the final item assessed.</p>
<p>8. How to Implement / Who Will Implement: Briefly describe the means of employment for each control (i.e., OPORD, briefing, rehearsal) and the name of the individual unit or office that has primary responsibility for control implementation.</p>	
<p>9. Residual Risk Level: After controls are implemented, determine resulting probability, severity, and residual risk level.</p>	



DEPARTMENT OF THE ARMY
UNITED STATES ARMY EVALUATION CENTER
2202 ABERDEEN BOULEVARD - SECOND FLOOR
ABERDEEN PROVING GROUND, MD 21005-5001

TEAE-SS

5 November 2014

MEMORANDUM FOR U.S. Army Maneuver Center of Excellence (MCoE) (ATZK-TDT/Michael R. Wood), 1 Karker Drive, Fort Benning, GA 31905

SUBJECT: Safety Release for Robotic Human-Type Target (RHTT) Provided for Technology Assessment and Training

1. References:

- a. MIL-STD-882E, Department of Defense (DOD), Standard Practice, System Safety, 11 May 2012.
- b. DA PAM 385-30, (Safety Mishap Risk Management), 1 February 2010.
- c. DA PAM 385-63, (Range Safety), 30 January 2012.
- d. Technical Bulletin (TB) 43-0134, Battery Disposition and Disposal, Headquarters, Department of the Army, 19 May 2008.
- e. Report, Nonionizing Radiation Protection Study No. 25-MC-0BWC-09, Laser Radiation Hazard Evaluation of the SICK, Inc. Model LMS 111 LIDAR, U.S. Army Public Health Command (PHC), 1 July 2009.
- f. Report, United States Marine Corps (USMC) Four Wheeled Robotic Moving Target System (FW-RMTS) Foreign Comparative Test Part 2 (FCT2) Safety Assessment Report (SAR), Marathon Targets, 5 September 2013.
- g. Test Site Visit, U.S. Army Evaluation Center (AEC) (TEAE-SS-D), Mr. Robert Gauss, 23-25 April 2013, subject: RHTT Demonstration, Fort A. P. Hill, VA.

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Distribution Statement B: Distribution authorized to U.S. Government Agencies only
(Test and Evaluation), November 2014.

Other requests for this document shall be referred to MCoE.

TEAE-SS

SUBJECT: Safety Release for Robotic Human-Type Target (RHTT) Provided for Technology Assessment and Training

h. Email, PHC, MCHB-IP-ONR, Ms. Penelope Galoff, 21 May 2013, subject: SICK LMS.

i. Phone Conference between Mr. Gauss, AEC, and Mr. Craven, Redstone Test Center, 29 May 2013, subject: Hazards of Electromagnetic Radiation Guidance for Commercial-off-the-shelf Wi-Fi.

j. Manual, Mobile Target Training System: System Overview, Marathon Targets, undated.

k. Manual, Mobile Target Training System: Maintenance, Marathon Targets, undated.

l. Manual, Mobile Target Training System: System Startup/Shutdown, Marathon Targets, undated.

m. Manual, Mobile Target Training System: TargetControl Software Version 12.11, Marathon Targets, undated.

n. Manual, Mobile Target Training System: TargetMap and Target Paint Software Version 12.11, Marathon Targets, undated.

o. Manual, Mobile Target Training System: TargetPlan Software Version 12.11, Marathon Targets, undated.

p. Email, MCoE, ATZK-TDT, Mr. Michael Wood, 15 October 2014, subject: One Year Safety Release for Robotic Human-Type Target (RHTT).

2. Purpose. This Safety Release of RHTT is provided for Technology Assessment and training. The Technology Assessment and training will be conducted by MCoE from 10 November 2014 through 30 November 2015, at Fort Benning, GA. Soldiers from the 198th/199th Infantry Brigades, 316th Cavalry Brigade, Army Marksmanship Unit, U.S. Army Sniper School, and the Noncommissioned Officers Academy will participate in the training. This Safety Release will expire on 15 December 2015. AEC conducted a safety review of the references and determined that adherence to the warnings, cautions, procedures, and mitigations identified in this Safety Release and references 1j through 1o minimizes all risks to a level commensurate with the risks of normal operations.

TEAE-SS

SUBJECT: Safety Release for Robotic Human-Type Target (RHTT) Provided for Technology Assessment and Training

3. System Description.

a. The RHTT is a system of automated humanoid robotic targets for live fire weapons training. Targets move in a designated area that is both mapped and defined by the operator using the RHTT software. The RHTT system is comprised of: robotic targets, a charger for each robotic target, portable computer rack control station, 802.11n Wi-Fi, and a ruggedized operator laptop for running RHTT software and controlling the movement of the RHTT.

b. The four-wheeled, RHTT T40 model (Figure 1) manufactured by Marathon Targets will be used as robotic targets. Movement of the RHTT T40 is remotely controlled via Wi-Fi by an operator via a laptop. Movements are either along programmed or random paths within an operator-defined area. The RHTT T40 is used to program the operator-defined area in addition to functioning as targets. Each RHTT T40 has a switch on its base for changing from charge mode to operational mode, plus an emergency-stop lanyard.

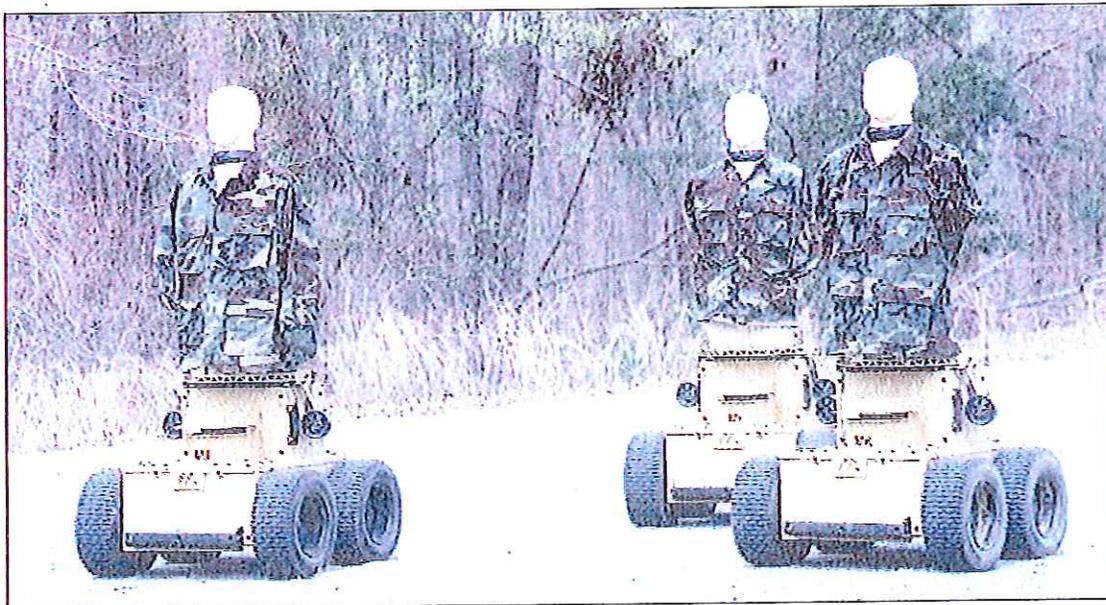


Figure 1. The RHTT T40.

c. The RHTT control station (Figure 2) is a portable computer rack that controls the RHTT Wi-Fi infrastructure and coordinates the operation of the RHTT T40s.

TEAE-SS

SUBJECT: Safety Release for Robotic Human-Type Target (RHTT) Provided for Technology Assessment and Training

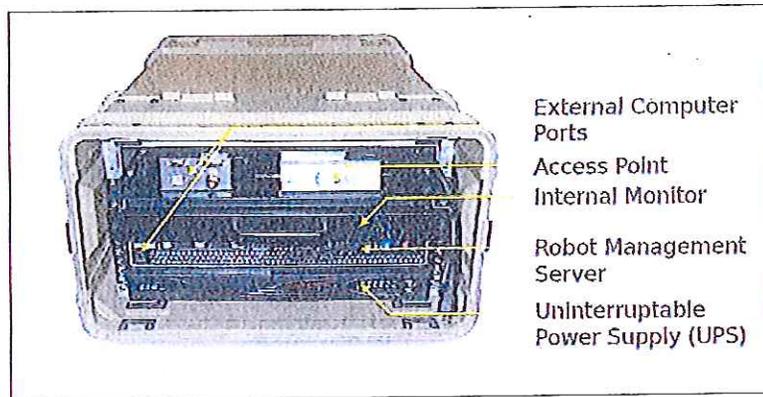


Figure 2. RHTT Control Station.

d. All RHTT components are connected by either Wi-Fi or hardwire to the networking hardware (Figure 3).

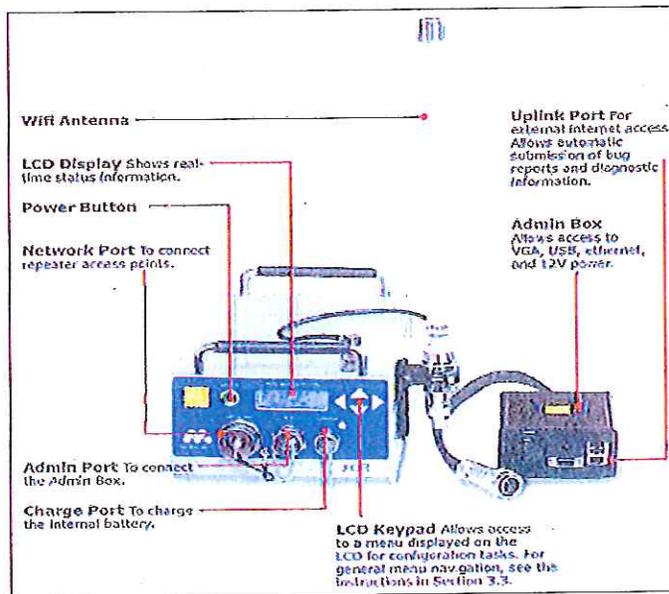


Figure 3. RHTT Networking Hardware.

e. The charger (Figure 4) is a docking station to recharge an RHTT. There is one charger per RHTT.

TEAE-SS

SUBJECT: Safety Release for Robotic Human-Type Target (RHTT) Provided for Technology Assessment and Training

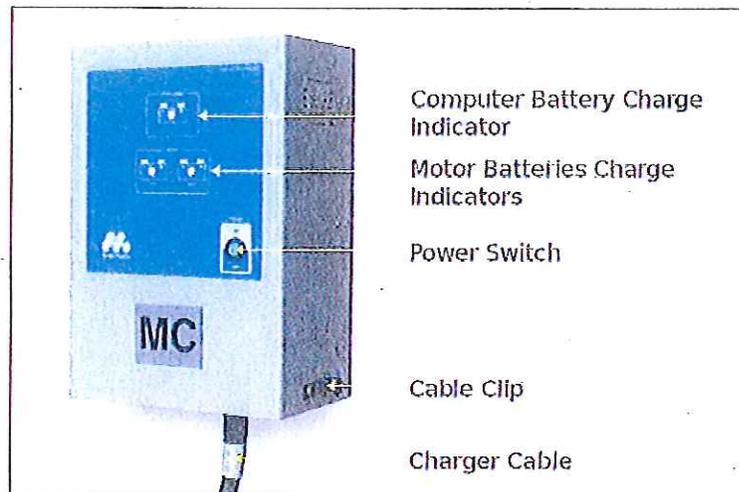


Figure 4. RHTT Charger.

f. The operator laptop (Figure 5) is a ruggedized portable personal computer (PC) that allows programming and operation of the RHTT.

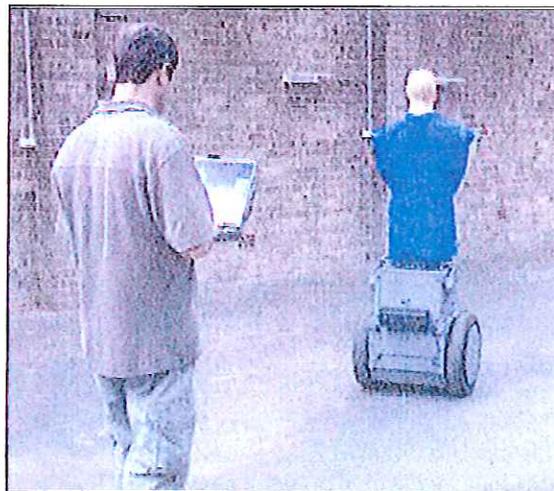


Figure 5. RHTT Operator Laptop.

4. Discussion.

a. Information for this Safety Release is derived through Test Manager review of the listed references. Safety Release Information was evaluated in accordance with (IAW) MIL-STD-882E (reference 1a).

TEAE-SS

SUBJECT: Safety Release for Robotic Human-Type Target (RHTT) Provided for Technology Assessment and Training

b. The laser in the base of the RHTT T40 is a Class 1 laser. Class 1 lasers are considered eye and skin safe and are not hazardous under any viewing or maintenance conditions.

c. The RHTT T40 has a steel base that could be hit by rounds (ordnance) during training exercises; therefore, the training exercises must occur on a range qualified for the weapon and ammunition used in training with steel/concrete impact media.

d. Radio Frequency (RF) transmitters can produce Hazards of Electromagnetic Radiation to Ordnance (HERO), Personnel (HERP), and Fuel (HERF). The 802.11n Wi-Fi transmitters have not been analyzed to determine Safe Separation Distances (SSD) from ammunition or ordnance with Electro-Explosive Devices (EEDs), personnel, and fuel. All RHTT RF transmitters must be turned off during transit to and from the training range. The training range must be free of ordnance containing EEDs.

e. Personnel must turn off all RHTT RF transmitters before performing any maintenance or handling.

f. While the RHTT T40 is being used for training, there will be no fueling operations at the training range.

g. Only Subject Matter Expert (SME) Soldiers and SME Civilians will operate the RHTT and perform any maintenance on the RHTT. However, Soldiers shooting at the RHTT T40 in training exercises will not perform maintenance on the RHTT T40.

h. The minimum allowable engagement distance from Soldiers to the RHTT T40 must be established by local range Safety Officer.

i. The RHTT T40 is powered by a rechargeable Lithium-Ion (Li-ion) battery. Li-ion batteries are safe under normal conditions, but may become extremely hot and emit smoke/flame when punctured, damaged, or misused. Soldiers should be instructed not to recharge, mishandle, mutilate, or short circuit the batteries and to follow handling and disposal procedures outlined in Technical Bulletin 43-0134 (reference 1d).

5. Conclusions. This Safety Release of RHTT is provided for Technology Assessment and training. AEC conducted a safety review of the references and determined that adherence to the warnings, cautions, procedures, and mitigations identified in this

TEAE-SS

SUBJECT: Safety Release for Robotic Human-Type Target (RHTT) Provided for Technology Assessment and Training

Safety Release and references 1j through 1o minimizes all risks to a level commensurate with the risks of normal operations.

a. The MCoE must provide the 198th/199th Infantry Brigades, 316th Cavalry Brigade, Army Marksmanship Unit, U.S. Army Sniper School, and the Noncommissioned Officers Academy Unit Commanders a copy of this memorandum for inclusion in the Unit risk management process and ensure the Soldiers are properly trained on the RHTT and aware of the guidance contained in this Safety Release.

b. The 198th/199th Infantry Brigades, 316th Cavalry Brigade, Army Marksmanship Unit, U.S. Army Sniper School, and the Noncommissioned Officers Academy Unit Commanders are responsible for providing risk acceptance documentation IAW DA-PAM 385-30 (reference 1b) and ensuring that the Soldiers are qualified to support the Technology Assessment and training

c. The MCoE hosting the Technology Assessment and training must put into practice a risk mitigation management process IAW DA-PAM 385-30 to implement the warnings, cautions, procedures, and mitigations addressed in this Safety Release and identified references. The MCoE hosting the Technology Assessment and training is also responsible for obtaining risk acceptance documentation from the Soldier chain of command.

d. This Headquarters must be notified immediately of any safety anomalies regarding Soldier use of RHTT.

e. This document does not satisfy a fielding requirement. Fielding requires a Safety Confirmation. This Safety Release does not authorize the use of RHTT outside the Continental U.S. (OCONUS) where hostilities are present.

TEAE-SS

SUBJECT: Safety Release for Robotic Human-Type Target (RHTT) Provided for
Technology Assessment and Training

6. The point of contact is Robert Gauss, TEAE-SS-D, 410-278-1289, DSN 298-1289, or
robert.w.gauss4.civ@mail.mil.

TRUTH IN TESTING!

FOR THE DIRECTOR:

BALL.MARC.E.1255225983 Digitally signed by BALL.MARC.E.1255225983
DN: cn=BALL.MARC.E.1255225983, o=DoD, c=US, email=BALL.MARC.E.1255225983
Date: 2013.03.15 11:05:11 -0500

MARC E. BALL
Lead Engineer, Test and Safety
Soldier and Support Systems Evaluation
Directorate



RECORD OF ENVIRONMENTAL CONSIDERATION
REC



EMD Number: 1518010

Project#: N/A

Project Title: RHTT Moving Targets

Description of Proposed Action:

Range mapping of RHTT Targets will be conducted prior to execution. While using the targets on Maertins, personnel will also understand that they will only engage RHTTs and static targets that are inside their firing lane. Standard static and moving targets will be engaged in accordance with a current Maertins range packet, with the understood restrictions in the safety waiver memo.

Project Location:

Maertins Range

Amount, Description, Location of Disturbance/Digging:

None

Number/Types of Vehicles:

3 LMTV, 2 TMP

Number of Personnel:

100

Type of Ammunition:

5.56, 7.62, 300 WIN MAG Live

Number/Types of Trees:

None

Will not be taken off road.

Types of Aviation:

None

Other Concerns:

None

Size of Project Area: Acres

Duration of Action: Start:7/11/2015 Stop:9/30/2016

Proponent: Adam Paich 706-580-6236

Unit, Section or Dept: S-3 2-16 Cavalry, 199th INF BDE

Decision: Concur with conditions

This Action is adequately covered in an Existing (EA/EIS) titled:

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

Training is Approved Through September 30, 2015

Cultural Resources - Archeological

None

Edward Howard (706-545-1898), 6/29/2015

No Comment.

Natural Resources - RCW

Conditions:

Jonathan Neufeldt (706-544-7705), 6/29/2015

USFWS, Cons. Br. and Range Div. did range walk in May 2015 at Maertins Range regarding use of RHTTs. USFWS concluded there were no RCW issues. USFWS required an administrative record letter from Cons. Br. regarding the use of RHTTs for training. Administrative record sent to USFWS on 21 May 2015 regarding RHTT use at Maertins.

EMD Number: 1518010 Project# N/A

Project Title: RHTT Moving Targets

CWA - Training

Conditions:

Jessica Loughman (706-604-4572), 7/1/2015

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 improper 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). Failure to follow these guidance could cause the site to be close for future use. Recommend use and implementation of FM 4-25.12 (FM 21-10-1) Unit Field Sanitation Team preventive medicine measures when establishing field food service facilities and other waste facilities. To include but not limited to Chapter 2, Section IV: Waste Disposal; Appendix A Lesson 6: Waste Disposal in the Field; Appendix B - Figures B-25, B-26, B-27, B-28. Unit to submit POC in charge of monitoring these activities. For additional specific guidance on field sanitation requirements - contact Fort Benning Preventive Medicine.

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 fuelling 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/dischage -- 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

Reviewed By

John E Brown

NEPA Program Manager

Date 2 JULY 2015

Signature Patrick R. Chauvey

Approved By

Patrick R. Chauvey

EPMB Chief

Date 02 JUL 2015

FORT BENNING ENVIRONMENTAL REGULATIONS SUMMARY

SENSITIVE AREAS: Endangered species habitat or cultural resources. They are marked with steel pickets and white signs. Digging and vehicular traffic is prohibited.

POL/HAZMAT SPILLS: Report all spills through Range Control at 545-3474. If assistance is required from the Fire Department/HAZMAT Team, Range Control will make notifications through E-911. For POL spills greater than 20 gallons on land or any quantity on surface water, the Environmental Management Division (EMD) must be immediately notified through E-911 or 545-9879/4203. For POL spills less than 20 gallons on land, a Spill Report Form must be submitted within 24 hours to the EMD (Call 545-9879 and/or FAX 545-4209). After hours call the spill pager at 317-6584.

Unit should begin spill control measurements (REACT) within their capabilities. If a spill occurs within a sensitive area; stop the source, contain, and absorb the spill material - do not dig until EMD personnel arrive at the site.

Be prepared to report:

- Time, grid location, and cause of spill.
- Type of product and amount spilled.
- Distance from flowing water.
- Action taken to combat spill.

See USAIC 210-4, Range and Terrain Regulations, for more detail.

ENVIRONMENTAL INCIDENT REPORT FORM

Unit: _____

OIC/NCOIC: _____

Training Area: _____

Grid Coordinates: _____

Date and Name: _____

Signature: _____

FB (DPW) Form 31, 1 May 2004 PREVIOUS EDITION OBSOLETE

FORT BENNING ENVIRONMENTAL REGULATIONS SUMMARY

RED-COCKADED WOODPECKER (RCW): Cavity trees are identified by two white bands. Cluster boundaries extend 200 feet around each cavity tree, and are delineated by diamond-shaped signs. **WITHIN a cluster:**

- Personnel MAY NOT stay for more than 2 hours; NO BIVOUACS.
- The only digging allowed is BY HAND for hasty defense light infantry fighting positions. ALL other digging is prohibited.
- Within one half mile of a cluster, NO MECHANICAL DIGGING may be done within 20 feet of any mature pine tree (8 inch diameter or greater).
- Off-road vehicles MAY NOT come within 50' of any cavity tree.
- Use only .50cal and 7.62mm (or smaller) blank ammo; NO LIVE FIRE.
- CS gas, HC smoke, and noise generators MAY NOT be used.
- Incendiary devices (including trip flares) MAY NOT be used.
- Only hardwood may be cut for camouflage; CUT NO PINE.

GOPHER TORTOISE: Inhabits burrows in high sandy areas. Some burrows are marked by white 1" PVC pipe topped with reflective tape. Digging and vehicular traffic must be kept more than 50 feet away from burrows.

----- CUT HERE -----

ENVIRONMENTAL INCIDENT REPORT FORM

For your protection, company commanders are asked to document any environmental incidents by completing this card and forwarding it to the Chief, Environmental Management Division, Building 6, Room 307, or call 545-2180, within 24 hours of incident. Check off incident and take corrective actions.

- ___ bivouacking in RCW cluster (Relocate bivouac site.)
- ___ off-road driving / parking within 50' of RCW cavity tree (Relocate.)
- ___ digging in RCW cluster [except individual hasty fighting positions] (Refill holes.)
- ___ scarring or felling of trees in RCW cluster (Contact EMD Conservation Branch through Range Control.)
- ___ digging or driving in Sensitive Area (Relocate, DO NOT refill holes.)
- ___ wildfire started (Begin suppression and contact Range Control.)
- ___ POL spill greater than 20 gallons on land or any quantity on water (Immediately contact Range Control and begin spill control - REACT.)
- ___ POL spill less than 20 gallons on land (Begin spill control - REACT; contact Range Control and submit a Spill Report Form to EMD within 24 hours.)

Example Unit/Activity SOP for Training and Deployment

Introduction

This SOP is divided into two main sections: PREVENTION & RESPONSE. The following sections will assist you in planning your environmental activities while bedding down, initiating, sustaining and conducting field exercises, and/or during deployment. Before you deploy, ensure you are familiar with the following:

What Are Hazardous Materials and Hazardous Wastes

Hazardous Materials are defined as any material that may be a health or physical hazard, or any material that, based on either chemical or physical characteristics, is capable of posing a risk to human health or the environment if improperly disposed of, handled, stored, or transported. Chemical and physical characteristics that may pose a risk to human health or the environment include, but not limited to, one of the following characteristics: Ignitable; Corrosive; Reactive and/or Toxic.

Hazardous Waste: is defined as any discarded material (solid, liquid or gas) that:

1. Has no further value and cannot be reused or recycled;
2. Is harmful to human health or the environment due to its quantity, concentration, biological, chemical or physical characteristics; and/or
3. Exhibits one or more of the characteristics as described for Hazardous Material.

Contaminated or unusable fuel is a typical hazardous material/hazardous waste common to training and deployment operations and should be handled, stored, and disposed of properly.

Ten of the most common hazardous materials/hazardous wastes that you will encounter during training and or deployment operations include:

- Fuel
- Engine Oil
- Bleach or DS-2
- Solvent
- Anti-Freeze
- Transmission Fluid
- Used Oil Filters or Batteries
- Empty POL Containers
- Brake Fluid
- Grease.

These materials should be handled, stored and disposed of properly.

SPILL KITS: Spill kits should be maintained in and around all locations where hazardous materials/hazardous wastes are stored, handled, or disposed. Various types of kits may be ordered through the U.S. Army Supply System and include: rubber gloves, safety goggles, putty, rubber mallet, wooden plugs, absorbent booms, absorbent pads, plastic bags, and in some cases, a disposal barrel.

SPILL PREPARATION: Despite the best prevention, you may run into difficulties and an accident may occur when you least expect it. To minimize contamination, hazards to people, and environmental damage, you must REACT immediately. To help you prepare, this SOP will tell you:

- **HOW to PLAN** and be ready to respond to a problem;
- **HOW to REACT** to a minor, intermediate or major spill; and
- **WHAT** to do after a spill occurs.

Planning

MINOR SPILLS

- When on the move, keep some plastic bags in your vehicle, and have your assigned On-Vehicle Equipment (OVE) ready for use.
- Maintain supplies, rags, absorbent pads, or other kinds of materials that will soak up spills on hard surfaces (like Dry Sweep), or know where you can easily obtain them.
- Keep Personal Protective Equipment (PPE) accessible (gloves, goggles, etc.).

INTERMEDIATE & MAJOR SPILLS

In addition to the procedures above:

- Know where to go for help.
- Know where spill kits are kept and learn how to use them.

Prevention

Vehicle Maintenance and Fueling Points, Hazardous Waste Collection Points and hazardous material Storage & Supply Areas may not be set up at your deployment destination. So PLAN to build your areas to prevent hazardous material accidents before they occur. Remember the following:

HAZARDOUS MATERIAL/HAZARDOUS WASTE AREA LOCATION - Locate hazardous material/hazardous waste areas away from living areas, bunkers, ammunition storage, fence lines and/or dining facilities. Place them near the areas where hazardous material are used.

MATERIAL SAFETY DATA SHEET (MSDS) - Keep MSDSs for each hazardous material stored or collected at hazardous material/hazardous waste areas.

UNIT/ACTIVITY ENVIRONMENTAL SOP & SPILL RESPONSE PLAN - Place SOP and Spill Response Plan at each hazardous material/hazardous waste area.

COMPATIBILITY OF MATERIALS - Store and/or dispose of each class of hazardous material/hazardous waste separately. MSDSs describe the classification of HMs. Four common classification include the following: Flammable (fuels), Corrosives (acids), Reactive (explosives), and Toxic (insecticides).

BEFORE you deploy, plan to pack drip pans, rags, plastic, Dry Sweep, absorbent, and spill pallets to prevent drips, spills, and leaks from seeping into the ground and contaminating soil and water resources.

SECONDARY CONTAINMENT - All liquid hazardous material/hazardous waste must have secondary containment. In order for it to be effective it must:

1. Hold 10% of the total hazardous material/hazardous waste stored or 100% of the largest container.
2. Have sand and/or pallets placed in certain areas to protect the liner.
3. Have overhead cover.

You should continually keep your hazardous material/hazardous waste areas clean and orderly by applying the principals of Monitoring and Housekeeping. An easy way to remember what to check, is

to remember your **CHECK** list:

Containment:

___ Ensure that secondary containment is used and in good condition.

___ Empty water within secondary containment on a regular basis and dispose of it as hazardous waste at the Hazardous Waste Collection Point.

Hazardous Material/Hazardous Waste locations:

___ Make sure the locations of your hazardous material/ hazardous waste are well chosen.

___ Put up warning signs and keep them clean and orderly.

Environmental Documentation:

___ **Maintain MSDSs for each hazardous material and update Unit/Activity SOPs and Spill Response Plans regularly.**

Containers:

___ Check condition of containers and keep containers of incompatible materials in proper order.

Kits:

___ Place Spill Kits, First Aid Kits, and Emergency Response Kits in the vicinity of the hazardous material/hazardous waste areas.

See Appendix D of the ASP for specific CHECKlists for areas such as: Vehicle Fueling & Maintenance Areas; Hazardous Waste Collection Points; and Hazardous Material Supply & Storage Areas.

Response

Be prepared to respond immediately to any spill situation. Keep your Environmental SOP and Spill Response Plan (SRP) readily available at the main hazardous material/hazardous waste areas. The SRP should ensure that the following measures are implemented:

- PERSONAL PROTECTIVE EQUIPMENT (PPE) - At the entrance of every hazardous material/hazardous waste area, keep a supply of PPE to protect hands, eyes, skin, ears, head, feet, and lungs. If you are unsure about which items you need, consult the MSDS for the HMs that you are using.
- MSDS - Make sure that MSDSs are available in order to REACT to spills safely and effectively.
- SPILL STATIONS - Maintain spill response equipment at a station near (not inside of) hazardous material/hazardous waste areas. They should contain: First Aid Kits, Fire Extinguishers, Spill Response Kits, and Emergency PPE.
- TRAINING - Improve your readiness by practicing the SPILL DRILL on a regular basis, and be sure to know the spill reporting process.

Respond to spills, major or minor, immediately in order to eliminate hazards that could cause personal injury and/or environmental damage. If assistance is required, or spill/release is major, immediately call 911 or the Fort Benning Military Police (MP) Desk.

In any spill situation:

1. Safety First! -- Protect yourself by using PPE, including goggles, gloves, and suits. THEN...
2. Do the SPILL DRILL -- REACT:

REMOVE THE SOURCE: Plug the drip or leak and stop the spill.

ENVELOP THE SPILL: Place absorbent booms around the spill area, or build an earthen dam, when appropriate, around the spill.

ABSORB/ACCUMULATE: Place appropriate absorbent material (Dry Sweep, pads, etc.) on the spill in the middle of the boomed-off area.

CONTAINERIZE THE HAZARDOUS WASTE: Use a shovel to place contaminated materials (including soil, booms, pads or other materials) in a plastic bag or a waste drum.

TRANSMIT A REPORT: If a spill is too large to handle alone, - REACT as best you can and get help!

See Appendix D of the ASP for specific REACT actions for spills involving:

- Minor Spills (20 gallons or less);
- Intermediate Spills (from 21-55 gallons); and
- Major Spills (more than 55 gallons), or any spill into water, where injuries occurred or where spills occurred off Fort Benning associated property.

In addition:

- Prevent hazardous material from entering storm sewers and waterways;
- Minimize impacts to vegetation and wildlife; and
- Notify proper personnel and maintain record of spill event.

Acronyms are defined in the ASP Table of Content

APPENDIX H

Spill Kits and Response Material Checklists

Summary Spill Kit and Response Material Checklist

Recommended Spill Kits for Unit/Activity Motor Pools, Aircraft Hanger Areas, and all POL Field Sites

Recommended Spill Kits for Fuel Carrying Vehicles

Recommended Spill Kits for Other Military Vehicles

Vehicles Transporting Hazardous Materials other than POL

Summary Spill Kit and Response Material Checklist	
Spill Kits and Response Material	Primary Contents
<p>Spill kits should be maintained in and around all locations where hazardous material and hazardous waste are stored, handled, or disposed.</p> <p>The contents of a spill kit will vary depending on the hazardous materials and their characteristics.</p> <p>Hazardous materials other than POL will require spill kits to meet their specific requirements, (i.e., acid spill kit for Battery Shop that handles lead acid batteries).</p>	<p>Spill kits should include as a minimum:</p> <ul style="list-style-type: none"> ✓ Rubber gloves, ✓ Safety goggles, ✓ Putty, rubber mallet, ✓ Wooden plugs, ✓ Absorbent booms, ✓ Absorbent pads, ✓ Plastic bags, and ✓ In some cases, a disposal barrel.
<p>The Unit/Activity must check the material's MSDS for specific information on PPE and spill supplies.</p>	<p>Units/activities transporting hazardous materials should also plan for having a minimum amount of response materials on hand.</p> <ul style="list-style-type: none"> ✓ Various types of kits can be ordered through the U.S Army Supply System (through the Units supply or S-4 shop); ✓ The Unit/Activity must assess their hazardous material inventory and plan to have enough spill response material to respond to the larger container within their facility and the minimum for any specific hazardous material that require specific spill materials or PPE; and ✓ Whenever the Unit gets to this minimum level, the user should initiate a reorder to the supply NCO or S-4 to maintain the minimum amount on-hand.

Acronyms are defined in the ASP Table of Contents

Recommended Spill Kits for Unit/Activity Motor Pools, Aircraft Hanger Areas, and all POL Field Sites

30-Gallon POL Boom Kit: Absorbs Approx. 40 Gallons
Polyurethane 2 Rolls
55-Gallon POL Kit: Absorbs Approx. 40 Gallons
1 55 Gallon Drum
2 Bags Absorbent
6 Booms 2x10
50 Absorbent Pads
10 Heavy Duty Trash Bags

Recommended Spill Kits for Fuel Carrying Vehicles

It's recommended that all fuel carrying vehicles should have a transportation pack spill kit or equivalent spill equipment on board at all times. The following vehicles are considered to be fuel transporting vehicles: HEMITT M971 2500 gallons, Tanker 5000 gallon, M49C 1200 gallon, Tank and Pump unit 600 gallon.

The following is a list of the minimum level of spill equipment recommended to be on hand in all fuel carrying vehicles, especially if they are traveling within the Installation or in a field exercise.

Drip Pan

30-Gallon POL Kit: Absorbs Approx. 20 Gallons
1 30 Gallon Drum
1 16 pound bag Absorbent
3 Booms 2x10
25 Absorbent Pads ~17x19
5 Heavy Duty Trash Bags
1 Dust Pan

Recommended Spill Kits for Other Military Vehicles

Recommended on Vehicle Equipment (OVE) for small spills (usually from vehicle leaks):

1 drip pan
4-5 absorbent pads
1-2 plastic bags.

Additional Materials or Equipment

For each one of these recommended spill kits, the following should be available:
PPE such as: Goggles and Gloves. (2-3 pairs)
1 Shovel
2 Labels for wastes
1 Spill report
1 Inventory

Vehicles Transporting Hazardous Materials other than POL

- ✓ Transportation of hazardous materials is regulated under the Department of Transportation. Personnel transporting hazardous materials must follow all DOT requirements.
- ✓ As a preventive measurement, vehicles transporting small amounts of hazardous materials or waste should have a transportation pack spill kit or equivalent spill equipment on board to REACT in the event of an incident.

- ✓ Hazardous Materials other than POL will require spill kits to meet their specific requirements. The Unit/Activity should check the MSDS for the materials that they transport and have appropriate amount for those particular materials.

Spill Response Record

PHASE I-IMMEDIATE ACTIONS FOR EVALUATING AND REPORTING SPILLS:

IMMEDIATELY REPORT ALL SPILLS TO YOUR SUPERVISOR AND/OR CALL 911 or the Fort Benning Military Police (MP) Desk

****BE PREPARED TO PROVIDE THE FOLLOWING INFORMATION TO THE 911 OPERATOR:**

During Duty Hours also Call Mr. Felix Seda, EMD Spill Manager at (706) 545-9879

1. DATE/TIME OF SPILL: _____ / _____
2. LOCATION: _____
3. MATERIAL SPILLED (include NSN and ingredients, if able): _____
4. HAZARD: FLAMMABLE _____ TOXIC _____ CORROSIVE _____
OXIDIZER _____ REACTIVE _____ UNKNOWN _____
OTHER (Specify) _____
5. CAUSE OF SPILL: _____
6. DESCRIPTION OF SPILL QUANTITY, SIZE AND TYPE OF AREA AFFECTED:
 - a. Quantity Released and Size of Spill Area: _____
 - b. Soil: _____
 - c. Pavement: _____
 - d. Vegetation: _____
 - e. Storm or Sewer Drain: _____
 - f. Name of body of Water (River, Creek, Pond, Lake, Drainage Ditch): _____
7. HAS RELEASE BEEN STOPPED? _____
8. HAS RELEASE BEEN CONTAINED? _____
9. DID RELEASE CROSS INSTALLATION BOUNDARIES: (IF YES, DESCRIBE LOCATION): _____
10. TYPE AND EXTENT OF INJURIES, IF ANY: _____

****Provide a copy of this form to DPW EMD Spill Program Manager or FAX to (706) 545-4209**

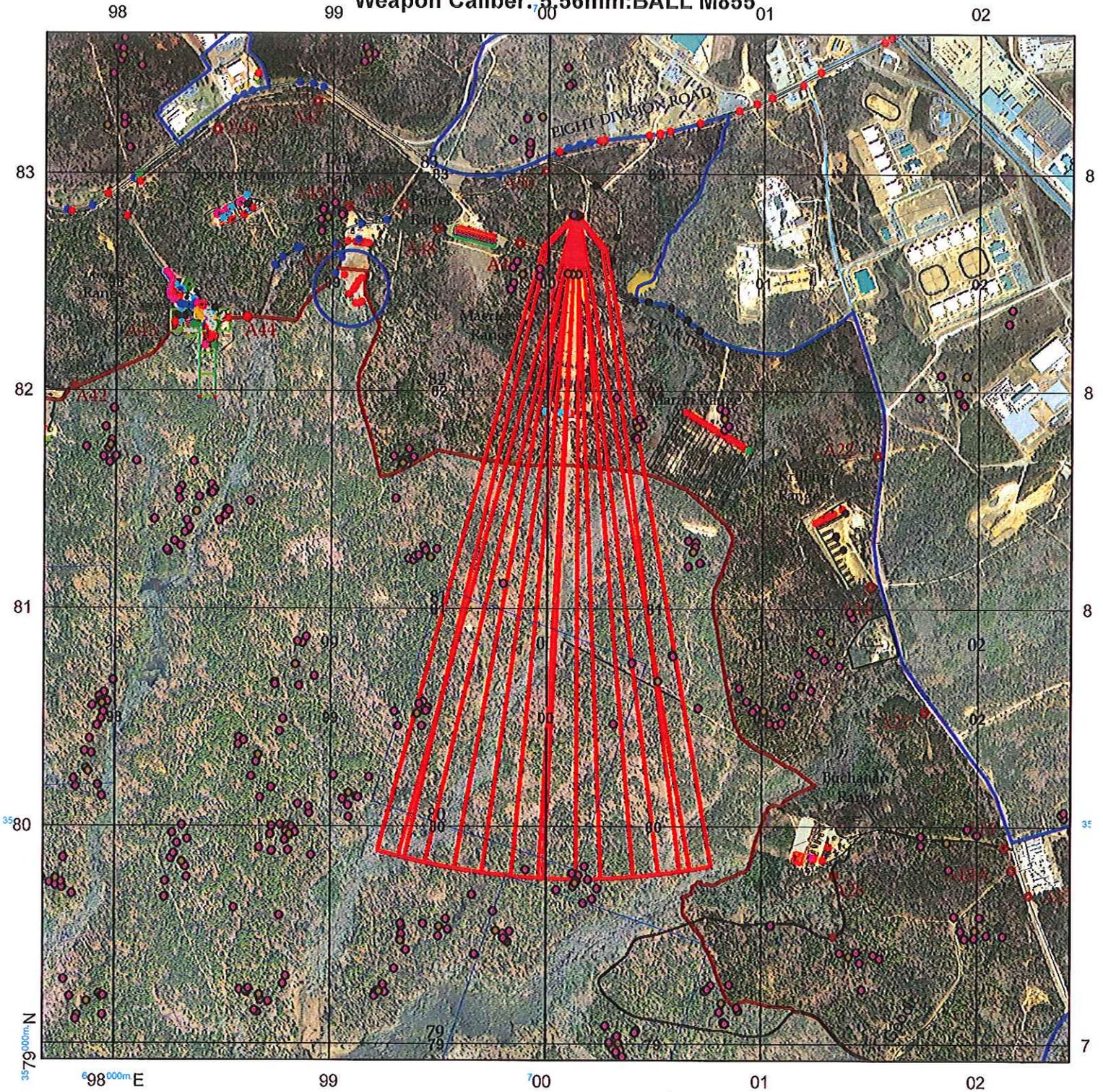
PHASE II — POST-SPILL RESPONSE AND CLEAN UP ACTIONS:

11. DESCRIBE CLEAN-UP METHOD AND CONTAINMENT PROCEDURES: _____
12. NAME OF CONTRACTOR INVOLVED IN CLEAN-UP: _____
13. ESTIMATED AMOUNT OF SPILL RESIDUE AND CONTAMINATED MATERIAL REMOVED: _____
14. ESTIMATED COST OF CLEAN-UP: _____
15. CORRECTIVE ACTION TAKEN OR TO BE TAKEN TO PREVENT FUTURE SIMILAR INCIDENTS: _____
16. NAME AND PHONE NUMBER OF PERSONNEL REPORTING SPILL: _____

****KEEP THIS FORM FOR A MINIMUM OF 5 YEARS**

FOUO Unclassified
Weapon Type: M4

Weapon Caliber: 5.56mm:BALL M855



Range Manager Signature Authority:	Date:		
Approving Authority: Brad Tesch	Date:		
SDZ Created By:	Date: 07/30/2015	Unit: 2-16th CAV	Phone: Email:
SDZ Name: Meartens Log# 7-6-15	Ground Target	Used Altitude: 1,000.00 ft	TP: 16SGA0011482538
Installation: None	Distance X: 3,049.00 m	Target Media: Earth	
Range Name: Maertens	Area A: 100.00 m	Lt GTL Azi: 180.03 deg	
Range Officer:	Dispersion Angle: 5.00 deg	Rt GTL Azi: 183.08 deg	
Min Target Dist: 271.00 m	Ricochet Angle: 5.00 deg	FP: 16SGA0013882808	
Max Target Dist: 272.00 m	Angle A: 30.00 deg	FP: 16SGA0012982809	
Direct Fire	Vertical Hazard: 163.00 m	TP: 16SGA0013882536	