CRM LESSON PLAN REPORT

INDICATORS OF HOMEMADE EXPLOSIVE (HME)
071-FREBB004 / 02.0 ©

Analysis
21 May 2013

Effective Date: N/A

SCOPE:

None

SECTION I. ADMINISTRATIVE DATA

All Course Masters/POIs Including This Lesson

Courses

Course Number	Version	Title	Phase	Status
9E-F59/950-F38	02.0	Dismounted Counter-IED Tactics Master Trainer	N/A	Analysis

POIs

POI Number	Version	Title	Phase	Status
9E-F59/950-F38	02.0 ©	Dismounted Counter-IED Tactics Master Trainer	0	Analysis

Task(s) Taught(*) or Supported

Task Number	Task Title	Status
Individual		
031-627-3040 (*)	Provide Technical Advice on Chemical Warfare Agent (CWA) Precursors	Approved
091-89D-3417 (*)	Perform EOD Procedures on Home Made Explosives (HME) and Precursors	Approved

Reinforced Task(s)

Task Number	Task Title	Status

Knowledge

Knowledge Id	Title	Taught	Required
052-K-00121	Military Explosives and Demolitions	No	Yes
052-K-00123	Explosive Hazards Indicators	Yes	Yes
191-FTP-0004	Detect Booby Traps and Improvised Explosive Devices	No	Yes
191-PRS-0011	Identify Explosives	Yes	Yes
052-K-00126	Minimum Safe Distance for Explosives	Yes	Yes

Skill

Skill Id	Title	Taught	Required
052-S-00007	Ability to Recognize Battlefield Hazard Indicators	Yes	Yes
S0805	Ability to Determine Grid Coordinates	Yes	Yes
052-S-00010	Ability to Understand Verbal Instructions	Yes	Yes
171-S0038	Ability to Alert leadership and other members to a possible IED and its distance, direction	Yes	Yes
052-S-00001	Send a Radio Message	No	Yes

Administrative/ Academic Hours

The administrative/academic (50 min) hours required to teach this lesson are as follows:

Academic	Resident Hours / Methods		
Yes	1 hr	30 mins	Discussion (small or large group)
Total Hours(50 min):	1 hr	30 mins	

Instructor Action Hours

The instructor action (60 min) hours required to teach this lesson are as follows:

	Hours/Actions		
	0 hrs	10 mins	Classroom Breakdown
	0 hrs	15 mins	Classroom Setup
Total Hours (60 min):	0 hrs	25 mins	

Test Lesson(s)

Hours	Lesson Number Version	Lesson Title
None		

Prerequisite Lesson(s)

Hours	Lesson Number Version	Lesson Title
None		

Training Material Classification

Security Level: This course/lesson will present information that has a Security Classification of: FOUO – For Official Use Only.

Foreign Disclosure Restrictions

FD3. This training product has been reviewed by the developers in coordination with the MCOE, Fort Benning, GA foreign disclosure officer. This training product cannot be used to instruct international military students.

References

Number	Title	Date
ATP 5-19 (Change 001 09/08/2014 78 Pages)	RISK MANAGEMENT http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/atp5_19.pdf	14 Apr 2014
DD FORM 2977	DELIBERATE RISK ASSESSMENT WORKSHEET	01 Jan 2014
FB (Safety) Form 385-1-E	Daily Risk Management Assessment Matrix	01 Oct 2013
FM 3-34.210	Explosive Hazards Operations	27 Mar 2007
FM 3-34.5	Environmental Considerations	16 Feb 2010
STP 3-CIED-SM-TG	Soldier's Manual and Trainer's Guide for Counter Improvised Explosive Device	09 Dec 2011
TC 9-21-01	SOLDIERS IMPROVISED EXPLOSIVE DEVICE (IED) AWARENESS GUIDE	28 May 2004

Student Study Assignment

Study for the next day’s assignment.

Instructor Requirements

Instructor must be certified in the following courses: Army Basic Instructor Course (ABIC) or DOD equivalent, Dismounted Counter-IED Tactics Master Trainer (DCT-MT) Course, Combat Life Saver (CLS), Small Group Instructor Course (SGIC), and Hand Held Device (HHD).

Support Personnel Requirements

Medical personnel or Combat Lifeaser (CLS).

Additional Support Personnel Requirements

Name	Student Ratio	Qty	Man Hours
Combat Lifesaver		1	2.0
NCOIC		1	1.0

Equipment Required for Instruction

ID - Name	Student Ratio	Instructor Ratio	Spt	Qty	Exp
2310-01-090-7709 - Bus Transit 44 Passenger	1:30	0:0	Yes	1	No
4110-01-485-3548 - Chest, Ice Storage, White, 162 Quart Capacity	1:15	0:0	Yes	3	No
5820-00-NSN - SCREEN, PROJECTION	1:15	0:0	Yes	2	No
5820-00-T93-6432 - PROJECTOR, VIDEO, LCD EPSON ELP33 WITH REMOTE	1:15	0:0	Yes	2	No
5860-01-363-8730 - Laser Pointer	1:15	0:0	No	2	No
5895-01-540-4543 - Computer, Laptop	1:10	1:3	No	0	No
6530-01-290-9964 - Litter, Folding, Rigid Pole	1:15	0:0	Yes	2	No
6545-01-532-3674 - Medical Equipment Set, Combat Lifesaver, Version 2005, UA 245A	1:15	0:0	Yes	2	No
6665-01-381-3023 - Wet Bulb-Globe Temperature Kit	1:15	0:0	No	0	No
6685-01-590-1047 - Monitor, Heat Stress: Questemp 44	1:15	0:0	No	0	No
6760-00-985-6749 - Tripod, Photographic	1:30	0:0	No	1	No
7021-01-C17-2297 - PC Tablet, Data Entry: Galaxy Tab 2 WIFI 16GB Samsung	1:1	0:0	No	0	No
7110-00-T81-1805 - BOARD, DRY ERASE	1:7	0:0	Yes	4	No
7240-00-098-3827 - Can, Military	1:15	0:0	Yes	2	No

(Note: Asterisk before ID indicates a TADSS.)

Materials Required

Instructor Materials:

1. Lesson plan with Appendix A, C, and D as applicable
2. All references linked to this lesson plan
3. Visitor Book
4. Risk Assessment
5. PowerPoint lesson presentation

Student Materials:

1. Student Disc
2. All references linked to this lesson
3. Pen/Pencil and note taking material

Classroom, Training Area, and Range Requirements

ID - Name	Quantity	Student Ratio	Setup Mins	Cleanup Mins
17120-M-1200-30 Classroom, Multipurpose, 1200 Square Feet, 30 Students	1		15	15
72114-0-0 Enlisted Barracks, Transient Training, 0 Square Foot, 0 Starting Point , Service Points, or Persons Supported	1		0	0
74046-0-0 Consolidated Open Dining Facility, 0 Square Foot, 0 Seats		1:30	0	0
44224-0-0 Organizational Storage Building, 0 Square Foot, 0 Cubic Foot		1:30	0	0

Ammunition Requirements

DODIC - Name	Exp	Student Ratio	Instruct Ratio	Spt Qty
None				

Instructional Guidance/ Conduct of Lesson

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

1. Have on hand identified reference materials linked to the lesson plan.
2. Review presentation and develop a list of questions to use during class.
3. Review and prepare conference/discussion material presented.
4. Ensure all equipment listed for this Lesson Plan (LP) is present, operable, and set up for use before class.
5. Refer to the practical exercise, Appendix C, of this lesson plan. When necessary develop additional situations to use during the practical exercise.
6. PowerPoint users: Ensure the Instructor's file has been called up using Microsoft PowerPoint Viewer and Instructor/slide 1 is displayed on the screen before class.
7. Whenever noted, slides are available to assist in explanation of task steps. Use slides as needed during class or practical exercise to reinforce training. The Instructor may choose to use/not use the LP SLIs as developed, modify the existing SLIs content/order or insert new material as is necessary based on audience analysis to assist in Soldier learning. Changes must be annotated as a pen/ink change on the vault file master LP, VIP LP, and Instructor LP.
8. Whenever necessary, ask leading questions of Soldiers in order to prompt Soldier discussion.
9. Most materials associated with this LP are provided to Soldiers in digital format loaded on their school issued CD and student handout unless stated within instructional notes. Instructor will have to issue all necessary. materials to Soldiers in hard copy unless they have individual Soldier laptop/digital capability.
10. Encourage Soldiers to relate their first hand experiences during the activities.
11. Facilitate this lesson using Instructor's methodologies.
12. Control group activities using Instructor's techniques.

1. **DURING INSTRUCTION**

   a. Follow the lesson plan, show and discuss slides as appropriate, and facilitate group discussion.

   b. Ensure students stay attentive and pay proper military respect to senior officers, dignitaries, and/or guest speakers.

   c. Ensure students take notes and actively participate in group discussions and stay focused on the lesson training objectives.

2. **AFTER INSTRUCTION**

   a. Ensure proper police of classroom and other areas used by the students.

   b. Ensure that no classified/sensitive material is left in the classroom.

   c. Check classroom for security, cleanliness, and energy conservation before departing area.

   d. Annotate FB Form 1087a, Instructor/Evaluator Comment Record as appropriate.

3. **BEFORE USING EQUIPMENT**

   a. Ensure students are given a specific safety briefing, if necessary.

   b. Perform proper power up/down procedures for computer equipment.

   Note: The above examples in no way limit the safety precautions that the individual instructor/facilitator may stress. There may be specific instances during conduct of lesson that the instructor/facilitator may caution students about.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date
None			NO DATA

SECTION II. INTRODUCTION

Method of Instruction: Discussion (small or large group)
Mode of Delivery: Resident Instruction
Instr Type (I:S Ratio): Military - ICH, ABIC/FIFIC Qual and CIED SME (1:5)
Time of Instruction: 5 mins

Motivator

Slide 1: Introduction and Motivator

- This lesson will give you the basic knowledge of HME and HME Precursors to enable to you to identify possible HME manufacturing facilities and storage areas.

Instructor's Note:
1. Introduce yourself before presenting the motivator. Only needed for the first time delivering instruction to the students.
2. Use the statement above as motivator or create your own as long as it is related to the TLO

Slide 2

Terminal Learning Objective

NOTE. Inform the students of the following Terminal Learning Objective requirements.
At the completion of this lesson, you [the student] will:

Action:	Recognize indicators of Homemade Explosives (HME) manufacturing.
Conditions:	In a classroom setting and or field environment, given a PowerPoint presentation, student resources, and instructional materials, doctrinal references, and equipment.
Standards:	Recognition must be IAW FM 3-34.210, and must achieve a score of 80% or greater on course examinations/rubrics. The recognition includes: 1. Defining Homemade Explosives (HME) 2. Recognizing the classes of HME 3. Recognizing indicators of HME **Learning Domain:** Cognitive **Learning Level:** Knowledge
Learning Domain - Level:	None assigned
No JPME Learning Areas Supported:	None

Safety Requirements

Safety Requirements in a Classroom Setting:
Safety is of the utmost importance in any training environment. During the training process, commanders will utilize the 5-Step Risk Management process to determine the safest and most

complete method to train. Every precaution will be taken during the conduct of training. Safety is everyone's responsibility to recognize, mitigate, and report hazardous conditions.
Instructor note: The instructor will brief the students on the unit/facility SOP for classroom contingencies (i.e. what doors will be used to exit the classroom, rally points, severe weather, WBGT/Kestrel set up, etc.)
Safety Requirements other than Classroom Settings:
Safety must be paramount in the complex outdoor environment. During the training process, commanders will utilize the 5-Step Risk Management process to determine the safest and most complete method to train. Every precaution will be taken while replicating realistic battlefield conditions. Safety is everyone's responsibility to recognize, mitigate, and report hazardous conditions. The instructor will brief the unit/site SOP and Risk Management Worksheet for all potential contingencies encountered during that training period/event (i.e. WBGT/Kestrel set up, trail vehicles for PT/foot marches, severe weather, fire, evacuation routes, muzzle awareness, range safety briefs, required medical FLA with driver and medics with emergency equipment, student injury procedures, and rally points etc.)

Risk Assessment Level

Low - All Army Instructors will conduct a Risk Assessment Worksheet (FB Form 350-1-E, Daily Risk Management Assessment Matrix, Oct 2013) prior to training and brief Soldiers on identified hazards.

Assessment: The Principal Instructor will prepare a risk assessment using the before, during, and after checklist and the risk assessment matrixes contained in Risk Management FM 5-19.

Controls: See Attached FB Form 350-1-E.
Leader Actions: See Attached FB Form 350-1-E.

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-34.5, Environmental Considerations {MCRP 4-11B}, and ensure students are briefed on hazards and control measures.

It is the responsibility of all Soldiers and DA civilians to protect the environmental from damage.

Instructional Lead-in

Understanding HME will enable you to make an accurate threat assessment to employ current dismounted equipment to counter the IED threat. All Soldiers must be able to identify HME.
Note: Use this statement or develop one of your own relating to the material.

SECTION III. PRESENTATION

TLO - LSA 1. Learning Step / Activity TLO - LSA 1. Define Home Made Explosive (HME)

Method of Instruction:	Discussion (small or large group)
Mode of Delivery:	Resident Instruction
Instr Type (I:S Ratio):	Military - ICH, ABIC/FIFC, DCIED SME (1:5)
Time of Instruction:	10 mins
Media Type:	Printed Reference Material / Handout / PowerPoint Presentation / Student Guide
Other Media:	Unassigned
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

Slide 3: Define Homemade Explosive (HME)

Homemade Explosives are a combination of commercially available ingredients combined to create an explosive substance or a combination of military and/or commercial explosives in bulk and/or trace amounts that result in a new, non-standard explosive mixture.

Instructor/Facilitator's Note:

1. Cover slide 4 after presenting the Instructional Lead-in:
2. Ask students to define HME.

Slide 4: How difficult can it be to manufacture HME?

1. Homemade explosives can be made from commonly available commercial chemicals with minimal effort.
2. Production is done by physically mixing ingredients or by chemically reacting ingredients.
3. Production steps:
   a. Obtain the ingredients
   b. Mix the compounds
   c. Cook, cool, or dry the mixture
   d. Package mixture

Instructor/Facilitator's Note:

1. Again, HME can be made from easily obtainable chemicals. The mixing of these chemicals involves either a physical or chemical process to manufacture the explosive compounds.
2. Chemical processes are more complicated and an inherently dangerous process and may require cooking, cooling and drying, whereas physical combinations like (ANFO) needs only to be mixed.
3. Unfortunately the types and amount of chemicals required and the mixing and/or cooking processes can be found online, and in books. But the purchase of some materials are reported to the authorities and internet is tracked on certain key words.

Slide 5:

Check on Learning: 1. Homemade explosives can be made from commonly

available commercial chemicals. True or False?

Answer: True

2. Which of the following is not a production step in the manufacture of HME?

a. Obtain the ingredients
b. Mix the components
c. Cook, cool or dry the mixture
d. Test the HME

Answer: d. Test the HME

3. The mixing of chemicals involves either a physical or chemical process to manufacture the explosive compound. True or False?

Answer: True

Review Summary:

During this LSA we discussed the definition of Homemade Explosives (HMEs) which is:
- A combination of commercially available ingredients combined to create an explosive substance or a combination of military and/or commercial explosives in bulk and/or trace amounts that result in a new, non-standard explosive mixture.

TLO - LSA 2. Learning Step / Activity TLO - LSA 2. Recognize the classes of HME

Method of Instruction:	Discussion (small or large group)
Mode of Delivery:	Resident Instruction
Instr Type (I:S Ratio):	Military - ICH, ABIC/FIFC, DCIED SME (1:5)
Time of Instruction:	30 mins
Media Type:	Motion Picture / Printed Reference Material / Handout / PowerPoint Presentation / Student Guide
Other Media:	Unassigned
Security Classification:	This course/lesson will present information that has a Security Classification of: FOUO – For Official Use Only.

Slide 6: Recognize the Classes of HME. The most common classes of HME are:

1. Nitrate base
2. Peroxide base
3. Chlorate base

Instructor/Facilitator's Note:

1. Common classes of HME:
   a. Nitrate base: Fertilizers, Ammonium Nitrate (AN) and Urea Nitrate (UN)
   b. Peroxide base: Derived from common Hydrogen Peroxide
   c. Chlorate base: Oxidizer used in fireworks
2. These are the three most common classes of HME.

Slide 7: Common Classes of HME.

- Nitrate Based

1. Fertilizer grade
   a. Coated prills
   b. Grind prills
2. Explosive grade
   - Uncoated prills

Instructor/Facilitator's Note:

1. Ammonium Nitrate (AN) comes in two basic forms:
   a. Fertilizer
   b. Explosive Grade
   c. Both can be used to manufacture HME, the only difference being the ease of use.
2. Ammonium Nitrate (AN), Fertilizer Grade.
3. AN is coated with a substance for time-release, the prills are a white to off white in color; however, the color can change with fuel additives. Common fuels added are Diesel, Kerosene (ANFO), Sugar (ANS) and aluminum powder (ANAL). AN has a strong acidic/caustic odor, smells like ammonia, the odor can be masked with an additive.
4. The coated prills should be ground down into powder form before mixing with a fuel. Fertilizer grade AN can be detonated without being mixed with a fuel additive, just requires a larger booster. The addition of a fuel into AN only enhances the sensitivity, therefore a smaller booster can be used to achieve the desired explosive affect.
5. Calcium Ammonium Nitrate (CAN) reacts the same as AN, difference being is the color, white to a brown in color and is odorless to a slight ammonia smell.
6. Explosive Grade Uncoated prills, used primarily in quarrying operations.
7. As of Dec 09, up to 85% of IED main charges using HME have been some type of ammonium nitrate compound.
8. On April 19, 1995, Timothy Mcviegh set of a VBIED weighing approximately 4,800 pounds of ANFO. Approximately 4,600lbs was fueled with Nitro-methane and 200lbs was fueled with diesel fuel. Effectively destroying the building and killing 163 civilians 20 of which were children

Slide 8: Common Classes of HME (cont.)

Nitrate Based

- Ammonium / Urea Nitrate Mixtures

1. Fuel Oil
2. Icing Sugar

3. Aluminum Powder

4. Nitromethane

5. Coffee

6. Flour

7. Pepper

Instructor/Facilitator's Note:

Nitrate Based

- Fuels that are added to Ammonium/ Urea Nitrate to enhance the explosive effects of the mixtures.

1. Fuel Oil

2. Icing Sugar

3. Aluminum Powder

4. Nitromethane

5. Coffee

6. Flour

7. Pepper

Slide 9: Common Classes of HME (cont.)

Nitrate Based

- Ammonium Nitrate Mixtures

1. Ammonium Nitrate and Aluminum (ANAL)

2. Ammonium Nitrate Sugars (ANS)

3. Ammonium Nitrate Fuel Oil (ANFO)

Instructor/Facilitator's Note:

1. ANAL is a mixture of ammonium nitrate and aluminum powder. Packaging is a commercial aluminized paint or powder packaging. It is a grey/silvery colored powder that is odorless. Residue will be noticeable in and on storage/packaging containers, hands and clothing. There has been a history of bags of aluminum powder placed in Urea Nitrate bags that have been emptied and refilled with Ammonium Nitrate then sewn shut.

2. ANFO is a mixture of ammonium nitrate and a fuel oil. Common fuels are Diesel, kerosene and heating oil, although other liquid fuels can be obtained and used. Appearance will be off white to a pinkish/reddish color. The odor will vary according to the liquid fuel added. Containers will have an oily residue and oil stains.

3. ANS is a mixture of ammonium nitrate and sugar/starches. Off white to white colored crystals/powder, common fuels are sugar products, wheat powder, saw dust, etc.

Slide 10: Common Classes of HME (cont.)

Nitrate Based

- Ammonium Nitrate-Oklahoma City, 1995

1. Timothy McVeigh was a United States Army veteran and security guard who detonated an IED in front of the Alfred P. Murrah Building.

2. 4,800 pounds of ammonium nitrate fertilizer Prills, Nitromethane, and diesel fuel mixture.

Instructor/Facilitator's Note:

1. The Oklahoma City bombing was a terrorist bomb attack on the Alfred P. Murrah Federal Building in downtown Oklahoma City on April 19, 1995. It was the most destructive act of terrorism on American soil until the September 11, 2001 attacks. The Oklahoma blast claimed 168 lives, including 19 children under the age of 6, and injured more than 680 people. The blast destroyed or damaged 324 buildings within a sixteen-block radius, destroyed or burned 86 cars, and shattered glass in 258 nearby buildings.

2. 4,800 pounds of ammonium nitrate fertilizer Prills, Nitromethane, and diesel fuel mixture (ANFO). The effects of the blast were equivalent to over 5,000 pounds (2,300 kg) of TNT, and could be heard and felt up to 55 miles.

3. The mixture consisted of prills and fuel creating ANFO. If the prills were ground to a power before mixing this charge could have had a multiplied effect of up to 4 times.

Slide 11: Common Classes of HME (cont.)

Nitrate Based

- Urea Nitrate

1. Urea is the most common fertilizer in Middle East
2. Sensitive to heat, shock, and friction
3. Simplest synthesized explosive to produce in quantity
4. Components
   a. Nitric Acid
   b. Urea

Instructor/Facilitator's Note:

1. Urea Nitrate, most common fertilizer in Mid-East. 140,000 pounds produced annually in the Afghan fertilizer market, which makes it legal to possess in Afghanistan.

2. Nitric Acid and Urea Nitrate is the simplest explosive to produce in quantity due to the ease of acquiring the materials.

   a. Used in many industrial applications

   b. Process of manufacturing fertilizers used as a component of rocket fuels and artificially age wood.

   c. It is also a little bit more sensitive to initiation than AN.

3. Urea Nitrate Explosives is a mixture of UN and Nitric Acid, although other acids can be used to produce the explosive compound. Urea Nitrate on its own is a white odorless pill, when mixed with nitric acid it has a strong industrial chemical odor picked up from the nitric acid.

4. This is a very easy and effective explosive to produce, burning at a rate of 11,155 ft/s. Urea is dissolved in water. You then add a concentrated amount of nitric acid in an ice bath, dry it out, and you have Urea Nitrate ($23.95 500 ML). Due to the strong acid content this compound must be mixed in plastic containers. When mixed with nitric acid is an explosive compound on its own and does not require an additional fuel to enhance its explosive sensitivity. The explosive compound must be stored in airtight containers and must be used within 30 days of manufacture.

5. The nitric acid normally ships in black plastic containers with red caps, although it can be stored in other plastic or glass containers. The acid will also leave bright yellow

stains on an individual's skin and fingernails when they come in contact with it.

6. Left Picture- Nitric Acid Jug, most common nitric acid container in Afghanistan.

7. Right Picture- Urea fertilizer, legal to possess.

8. February 26, 1993, A VBIED was detonated below the North Tower of the World Trade Center in New York, NY. The 1,336 lbs. (606 kg) urea nitrate-hydrogen gas enhanced device was intended to knock the North Tower (Tower One) into the South Tower.

Slide 12: Common Classes of HME (cont.)

Nitrate Based

- Urea Nitrate - World Trade Center 1993

1. Picture of terrorist
2. Picture of World Trade Center Towers
3. Picture of damage

Instructor/Facilitator's Note:

1. The World Trade Center bombing occurred on February 26, 1993, when a truck bomb was detonated below the North Tower of the World Trade Center in New York, NY. The 1,336 lb (606 kg) urea nitrate-hydrogen gas enhanced device was intended to knock the North Tower (Tower One) into the South Tower (Tower Two), bringing both towers down and killing tens of thousands of people.

2. It failed to do so, but did kill six people and injured more than a thousand.

3. The attack was planned by a group of Muslim terrorists including Ramzi Yousef, Mahmud Abouhalima, Mohammad Salameh, Nidal A. Ayyad, Abdul Rahman Yasin and Ahmad Ajaj. They received financing from Khaled Sheikh Mohammed, Yousef's uncle.

4. In March 1994, four men were convicted of carrying out the bombing: Abouhalima, Ajaj, Ayyad and Salameh. The charges included conspiracy, explosive destruction of property, and interstate transportation of explosives. In November 1997, two more were convicted: Ramzi Yousef, the mastermind behind the bombings, and Eyad Ismoil, who drove the truck carrying the bomb.

Slide 13: Common Classes of HME (cont.)

Peroxide Based

Shows pictures of Peroxides that can be found at:

1. Drug Store
2. Food Grade
3. Beautician Supply

Instructor/Facilitator's Note:

1. At drug store. Hydrogen peroxide comes in various concentrations.
   a. Home use = 1-3% solution.
   b. Food grade = 35% solution.
   c. Beauty supply = 40%.
2. One gallon of ?% Hydrogen peroxide yields 5lbs of TATP.
3. Would need to evaporate off all the water to increase the solution.
4. One gallon of Hydrogen peroxide yields 5lbs of Triacetone Triperoxide (TATP).
5. Emphasize the percentage of solution mixtures. The higher the percentage will

yield a higher amount

Slide 14: Common Classes of HME (cont.)

Peroxide based

- Triacetone Triperoxide (TATP)

1. Acetone, Sulfuric Acid, and Hydrogen Peroxide
2. Very sensitive to heat, shock, friction, and flame
3. Used primarily as an improvised initiator.

Instructor/Facilitator's Note:

1. TATP is the most commonly produced form of acetone peroxide, which takes the form of a white crystalline powder with a distinctive bleach like smell. It begins to breakdown and degrade around two weeks after mixing is complete.
2. Due to its chemical instability it has also been called “Mother of Satan”.
3. Because of varying recipes and different purities in reagents, diacetone diperoxide (DADP) is formed as a by-product during the synthesis of TATP.
4. In whatever form, acetone peroxide compounds are incredibly unstable and dangerous.
5. Large crystals, typically seen in older mixtures, are more dangerous as they are easier to shatter.
6. There is a common myth that the only “safe” acetone peroxide is the trimetric TATP form, made at low temperatures, but the reality is the acid-catalyzed per oxidation of acetone always produces a mixture of diametric and trimetric forms.
7. Hydrogen peroxide can be found on the internet, home depot, or beauty supply stores.
8. Reference IED Components.
   a. "Rich" Discuss London 2005, follow-on raids.
   b. How old is device.
   c. In London the initiators were found to be light bulbs.
   d. On Dec. 22, 2001, American Airlines Flight 63, carrying a crew of 14 and a passenger complement of 184, including "shoe bomber" Richard Reid, departed Charles de Gaulle Airport in Paris, France, bound for Miami, Florida. Approximately one and a half hours into the flight, a flight attendant smelled what she thought was a burnt match. After the flight attendant determined that it was coming from where Reid was seated, she confronted Reid, at which time he put a match into his mouth. The flight attendant alerted the captain over the intercom system. Reid went on to light another match in an apparent attempt to set fire to his shoe. The flight attendant then noticed a wire protruding from the shoe. A struggle ensued among several of the flight attendants, passengers and Reid. Ultimately Reid was subdued and restrained for the remainder of the flight. The flight was diverted for landing to Boston's Logan International Airport, where Reid was taken into federal custody. Later analysis by the FBI laboratory in Washington determined that there were two functional improvised explosive devices hidden in Reid's shoes made of the explosive material triacetone triperoxide, known as "TATP," and other components. Richard Reid's shoe had 8 or 10 ounces of triacetone triperoxide and PETN. The same red detonation cord that was found in his shoe, in which the lot numbers matched was found in Kandahar,

Aghanistan.

Slide 15: TATP- Common Classes of HME (cont.)

Peroxide based

- TATP - American Airlines Flight 63, 2001

1. Picture of Richard Reid
2. Picture of show bomb
3. Picture of airline
4. Picture of shoes

Instructor/Facilitator's Note:

1. On Dec. 22, 2001, American Airlines Flight 63, carrying a crew of 14 and a passenger complement of 184, including "shoe bomber" Richard Reid, departed Charles de Gaulle Airport in Paris, France, bound for Miami, Florida.

2. Approximately one and a half hours into the flight, a flight attendant smelled what she thought was a burnt match.

3. After the flight attendant determined that it was coming from where Reid was seated, she confronted Reid, at which time he put a match into his mouth.

4. The flight attendant alerted the captain over the intercom system.

5. Reid went on to light another match in an apparent attempt to set fire to his shoe.

6. The flight attendant then noticed a wire protruding from the shoe. A struggle ensued among several of the flight attendants, passengers and Reid.

7. Ultimately Reid was subdued and restrained for the remainder of the flight.

8. The flight was diverted for landing to Boston's Logan International Airport, where Reid was taken into federal custody.

9. Later analysis by the FBI laboratory in Washington determined that there were two functional improvised explosive devices hidden in Reid's shoes made of the explosive material Triacetone Triperoxide, known as "TATP," and other components. Richard Reid's shoe had 8 or 10 ounces of plastic explosives, a short length of detonating cord and improvised blasting cap containing TATP.

10. The same red detonation cord that was found in his shoe, in which the lot numbers matched detonating cord that was found in Kandahar, Afghanistan.

Slide 16: Common Classes of HME (cont.)

Peroxide Based

- HMTD - Hexamethylene Triperoxide Diamine

1. Citric Acid, Hexamine, Hydrogen Peroxide
2. Very sensitive to heat, shock, and friction
3. HMTD is corrosive to Aluminum, Zinc, Copper, Lead, Iron and Brass
4. Becomes more sensitive and unstable over time.

Instructor/Facilitator's Note:

1. HMTD- Hexamethylene Triperoxide Diamine
   a. Citric Acid, Hexamine, Hydrogen Peroxide
   b. Very sensitive to heat, shock, and friction
   c. HMTD is corrosive to Aluminum, Zinc, Copper, Lead, Iron and Brass
   d. Becomes more sensitive and unstable over time 2. Like other organic peroxides such as acetone peroxide, HMTD is an unstable compound that is sensitive

to shock, friction, and heat. This makes the substance extremely dangerous to manufacture. It also reacts with most common metals, which can lead to detonation. HMTD degrades too quickly for modern commercial and industrial applications, becoming useless in a matter of weeks.

3. Despite no longer being used in any official application, and despite its shock-sensitivity, HMTD remains a common home-made explosive and has been used in a large number of suicide bombings throughout the world, and was used in the 7 July 2005 London bombing

Slide 17: Common Classes of HME (cont.)

Chlorate based

1. Chlorates are the easiest to prepare

2. Chlorates are one of the most often used oxidizers in pyrotechnics.

Instructor/Facilitator's Note:

1. Potassium Chlorate is a white odorless powder or fine crystals (odor and color influenced by additive).

2. Potassium chlorate is a powerful oxidizing agent, and is used to manufacture explosives because of its ability to produce oxygen.

3. It is the principal component of chlorate-based explosives.

4. Potassium chlorate and an energy source, in the form of a sugar mixture or combustible material (such as oils, greases, paraffin, or liquid nitrogen compounds) are widely used as incendiary and explosive materials. If mixed with sulfur, which will give it a pale yellow color, it will be extremely sensitive to friction.

5. The addition of sulfuric acid (H_2SO_4) to either potassium chlorate alone or potassium chlorate mixed with an energy source additive creates powerful, volatile explosives.

6. Chlorates are the easiest to prepare, but again, the use of chlorates is not recommended for amateur use. Potassium chlorate is extensively used commercially since it is cheaper to produce than potassium per chlorate.

7. Potassium chlorate, $KClO_3$ Oxidizer.

a. Originally used very commonly in pyrotechnics, potassium chlorate has gradually been phased out due to its sensitivity, in favor of potassium per chlorate.

b. Mixtures containing potassium chlorate and ammonium salts, phosphorus or anything acidic are particularly dangerous.

c. For this reason mixtures containing potassium chlorate and sulfur are to be avoided, as sulfur (especially the common "flowers" of sulfur) may contain residual amounts of acid that can sensitize the mixture.

8. In general, potassium chlorate should be avoided unless absolutely necessary.

9. Chlorates have probably caused more accidents in the industry than all other classes of oxidizers together.

10. The reason lies in their sensitivity to acids and their low decomposition temperature.

11. When mixed with an easily ignitable fuel, such as sugar or sulfur, chlorates will ignite from a fingernail striking a wire screen.

12. Sulfur is often acidic, a fact that has lead to spontaneous ignition of sulfur-

chlorate compositions.

13. If you intend to use chlorates, pay extra attention to safety.

Slide 18 : Common Classes of HME (cont.)

Chlorate based

- Potassium chlorate

1. Many terrorist sources suggest this process as part of improvised explosives manufacturing.
2. Extracted from matches.
3. Can also be purchased in bulk from fireworks/chemical supply houses.

Instructor/Facilitator's Note:

1. Potassium chlorates can be easily purchased, terrorist prefer to us this because it is cheap and easy to obtain. China is a prime producer and seller of potassium chlorates.

2. The Boston Marathon bombings contained chlorates that were recovered from large amounts of fireworks purchased, disassembled and packed into the pressure cookers that were used by the bombers

Slide 19:

Check on Learning:

1. What is the most common nitrate based HME?
   a. Nitric Acid
   b. Urea
   c. Ammonium Nitrate and Aluminum (ANAL)
   d. Potassium

   Answer: c. Ammonium Nitrate and Aluminum (ANAL)

2. Ammonium Nitrate comes in two basic forms.
   a. Solid and Liquid
   b. Fertilizer and explosive grade
   c. Gas and Liquid
   d. None of the Above

   Answer: b. Fertilizer and explosive grade

3. Potassium Chlorate is the most often used oxidizer in pyrotechnics. True or False?

   Answer: True

Review Summary: During this LSA we covered how to recognize the classes of HME which includes:

1. Nittrate based
2. Peroxide based
3. Clorate based

TLO - LSA 3. Learning Step / Activity TLO - LSA 3. Homemade Explosives (HME) Indicators.

Method of Instruction:	Discussion (small or large group)
Mode of Delivery:	Resident Instruction
Instr Type (I:S Ratio):	Military - ICH, ABIC/FIFC DCIED SME (1:5)
Time of Instruction:	30 mins
Media Type:	Motion Picture / Printed Reference Material / Handout / PowerPoint Presentation / Student Guide
Other Media:	Unassigned
Security Classification:	This course/lesson will present information that has a Security Classification of: FOUO – For Official Use Only.

Slide 20: Recognize Indicators of HME Activity

- What are you looking for?

1. Mixing capability
2. Cooling capability
3. Burners
4. Large steel or plastic containers for mixing, boiling and storing HME
5. Strange odors (chemicals, acrid, ammonia)
6. Slurry or burn pits
7. Safety equipment
8. Detached labels
9. Note: Indicator alone is not enough to determine if a Lab is in progress. The totality of circumstances must be measured in addition to the indicators and precursors found to determine if there's an actual HME Lab.

Instructor/Facilitator's Note:

1. What are we looking for?

a. Mixing capability (Beakers, Funnel, Graduated Cylinder, Erlenmeyer Flask, Dropper, Watch Glass).

b. Large amounts of ice or cool down containers (coolers) (Peroxide base chemicals must reach room temperature or cooler in order to crystallize).

c. Burners, fuels in excessive amount for heating. (Some chemicals must be boiled to a certain temperature in order to produce the right composition).

d. Large steel or plastic containers for mixing, boiling and storing HME.

e. Strange odors (chemicals), your nose and eyes will let you know when you are close to an HME Lab.

f. Slurry or burn pits (Slurry pits would be a much stronger indicator).

g. Safety equipment that could be used if mixing chemicals.

h. Detached labels laying on the ground or floor (Acid base chemicals cause oxidation and labels tend to fall off the metal containers).

2. PPE, depending on the circumstance, is a giveaway. We want to find it before the

explosives have been made.

3. If there is a abundance of these types of products you need to evacuate the area and start the 5 Cs.

Slide 21: Indicators of HME Activity (cont.)

- Large quantities of commercial chemicals. Shows pictures that includes:

1. Muriatic Acid
2. Acetone
3. Three varietions of Hydrogen Peroxide

Instructor/Facilitator's Note:

1. Look for large quantities of chemicals that do not fit with the individual's job.
2. Look for excess or high grade chemicals when commercial off the shelf items would normally do the job.
3. Items shown on this slide have all been used in the manufacturing of HME.
4. Why glass / plastic containers?...some chemicals are reactive to metals, light or moisture. Think PPE and HAZMAT safety (no flame 50').
5. Tractor trailer was carrying approx. 2500kg (5511 lbs) of Ammonium Nitrate (AN), and approx. 2500kg (5511 lbs) Potassium Chlorate.
    a. The jingle truck was determined to be carrying approx. 19500kg (42990 lbs) of Ammonium Chloride.
    b. The 25kg bags of Ammonium Chloride were each hidden inside of 50kg bags of flour.

Slide 22: Indicators of HME Activity (cont.)

- Drying and Mixing. (Shows pictures of drying and mixing).

Instructor/Facilitator's Note:

1. Drying rooms, depending on the type of HME do not enter. Urea Nitrate, is not that unstable.
2. If they are mixing TATP or HMTD, Do Not Enter.
    a. Stand in the doorway and take a picture.
    b. Report to EOD immediately.
    c. Be aware of odors.
3. Note the M4 in the picture…you have the rest of your life to get the moto-photo=NOT worth it! Drying rooms can be smelled before seen, sometimes blocks away (acetone/urea).
4. The video is from Afghanistan and they are mixing by hand, also picking out any clumps and breaking them down as you don't want any air gaps in the mixture.

Slide 23: Indicators of HME Activity (cont.)

- Storage Areas

1. Large quantity of containers.
2. Burn marks on walls.
3. Pressure cookers with explosives.

Instructor/Facilitator's Note:

1. Storage Areas
    a. Large quantity of containers
    b. Burn marks on walls

c. Pressure cookers with explosives and safety fuses

2. Urea can be used as a stabilizer in nitrocellulose explosives. FYI…

3. Urea can also be used as an additive ingredient in cigarettes to enhance flavor.

4. Photos were taken in Iraq.

a. Note the chemical (vs. thermal) burns from the nitric acid.

b. Think Hazardous Material (HAZMAT) and PPE (photos from Iraq).

Slide 24: Indicators of HME Manufacturing

- Lab Equipment. (Shows pictures of Lab Equipment)

Instructor/Facilitator's Note:

1. There are many possible setups for an HME lab.

2. They range from the very basic in the top two pictures (this is what you most likely will find) to the more advanced in the bottom two pictures.

3. DO NOT INFLUENCE ANYTHING!!

4. Treat like a VOIED…if it's being cooled, stirred, heated, etc. leave it alone and call HIGHER ASAP.

Slide 25: Indicators of HME Manufacturing (cont.)

- Cooking equipment

1. Requires knowledge, equipment, and skill

2. Most use mixed acids

3. Nitric and sulfuric acids are most common

Instructor/Facilitator's Note:

1. The production pictured here depicts steps required to chemically combine fuels and oxidizers.

2. To create these compounds not only is heating necessary but a resultant exothermic reaction (an undesirable result) continues after production (hence cooling steps are taken).

3. These processes are extremely hazardous and the compounds at every step are highly toxic/sensitive. Compounds can detonate during the mixing or cooking process.

Slide 26: Indicators of HME Manufacturing (cont.)

- Safety Equipment used for HME

1. Masks

2. Gloves

3. Aprons

4. Eye protection

Instructor/Facilitator's Note:

1. These may not be present.

2. The TSE operator needs to consider the occupation of the owner.

3. For example, if he works in a chemical plant, their respirator, gloves and apron would be justified, but for a farmer it would not.

4. Our posture should include applicable PPE HAZMAT awareness.

5. Individuals who do not use PPE will commonly have chemical burns on their hands (bright yellow stains) and clothing.

Slide 27: Indicators of Heroin Activity

1. Common HME and drug precursors

2. Formal education and training

Instructor/Facilitator's Note:

1. Some of the common precursor chemicals used in the manufacturing of heroin are also the same precursors used in the manufacturing of HME.

2. They include Acetic Anhydride, Hydrogen Peroxide, Nitric Acid, and Formaldehyde.

3. Heroin chemists possess the formal education to synthesis heroin and understand the entire manufacturing/synthesis process from the beginning to end stages.

4. It is believed by JIEDDO that these same chemists (up to several hundred) could be instructing insurgents on the manufacturing and/or synthesis of HME found in Afghanistan.

5. The entire opium process is summed up in the following…Just before reaching maturity, the poppy plant produces a flower. After about a week, the flower petals fall off, leaving a capsule. Raw opium gum is harvested from this capsule.

6. The surface of the capsule is cut, or "scored," with a knife containing three or four small blades, and the opium gum oozes out through these cuts.

7. The next day, the farmer scrapes the gum off the capsules with a flat tool called a scraper.

8. Each capsule is usually scored in this manner three to five times, or until scoring produces no more gum. Poppy fields contain thousands of poppy capsules, so harvesting is very labor intensive.

9. Once the gum is collected, the farmer sets it out to dry for several days, then wraps it in plastic. The gum is stored until a trader comes to the village--opium gum has a very long shelf life and can gain value over time.

10. After the harvesting process is complete, the capsules are cut from the stem, allowed to dry, then broken open so that the seeds inside the capsule can be used for next year's crop.

11. Refining raw opium into heroin is a tedious, multistep process. Once the opium gum is transported to a refinery, it is converted into morphine, an intermediate product.

12. This conversion is achieved primarily by chemical processes and requires several basic elements and implements.

13. Boiling water is used to dissolve opium gum; 55-gallon drums are used for boiling vessels; and burlap sacks are used to filter and strain liquids.

14. When dried, the morphine resulting from this initial process is pressed into bricks.

15. The conversion of morphine bricks into heroin is also primarily a chemical process.

16. The main chemical used is acetic anhydride, along with sodium carbonate, activated charcoal, chloroform, ethyl alcohol, ether, and acetone.

17. The two most commonly produced heroin varieties are No. 3 heroin, or smoking heroin, and No. 4 heroin, or injected heroin.

18. The refining process has been perfected to the point where heroin purity levels are above 90 percent, as the product leaves the refinery. However, as the heroin

makes its way to the US, it passes through many hands.

19. To maximize individual profit, substances that make the heroin less pure and more bulky are added at each stop.

20. These diluents are white and powdery just like the heroin and include caffeine, baking soda, powdered milk, and quinine.

21. By the time the heroin gets to the user, it is often only about 40 percent pure, and little is known by anyone involved in the production or trafficking of the drug about the components of the other 60 percent.

Slide 28: Safety Precautions

1. HME laboratory hazards:
   a. Chemicals used may be flammable or explosive
      - Do not touch anything
   b. Chemicals may be absorbed through skin contact
   c. Fumes may be eye and inhalation irritant
   d. Chemicals may be corrosive
2. Evacuate if HME materials present a hazard
3. Contact EOD

Instructor/Facilitator's Note:

1. The safety of you and your Soldiers should be paramount in and around suspected HME manufacturing facilities.

2. Most of the chemicals used are very dangerous and can cause short term and well as long term damage to your health.

3. If you know your mission is going to look for an HME lab you should prepare your PPE accordingly (I.e. pro-mask, gloves, MOPP suit).

4. If necessary refresh yourself and your Soldiers on the precursors and what to look for.

Check on Learning:

Slide 29

1. If on patrol and you come across a room filled with unknown chemicals, what is your procedure?

Answer:

a. Do Not Enter the Room. Stand in the doorway and take a picture.

b. Report to Explosive Ordinance Disposal (EOD) immediately.

c. Be aware of odors

d. Conduct the 5 C's.

2. Common precursor chemicals used in the manufacture of heroin are also the same precursors used in manufacturing HME. True or False?

Answer: True

3. What sensory indications occur when HME manufacturing is present?

Answer: The eyes and respiratory tract is often the first indicator HME manufacturing is present

Review Summary:

During this LSA we discussed how to recognize indicators of Homemade Explosive (HME) activity which included:
1. Large quantities of commercial and industrial grade chemicals
2. Drying and mixing
3. Storage Areas
4. Lab Equipment
5. Cooking equipment

SECTION IV. SUMMARY

Method of Instruction:	Discussion (small or large group)
Mode of Delivery:	Resident Instruction
Instr Type(I:S Ratio):	Military - ICH, ABIC/FIFC Qual - CIED SME (1:5)
Time of Instruction:	5 mins

Check on Learning

Make sure that students met the lesson objective:

Ask questions to see if students can recognize indicators of Homemade Explosive (HME) manufacturing including:

1. Defining Homemade Explosives (HME)
2. Recognizing the classes of HME
3. Recognizing indicators of HME

Provide feeback and correct misunderstandings.

Review/ Summary

Slide 30:

1. Lesson: Indicators of HME
2. In this lesson we covered:
   a. The definition of HME
   b. Classes of HME
   c. Iindicators of HME
   d. Hazards associated with HME
   e. Safety precautions associated with HME

Instructor Note:

1. Reiterate: Identify indicators and hazards of Homemade Explosive (HME) precursors and manufacturing
2. Recite definition - A combination of commercially available ingredients combined to create an explosive substance.

Check on Learning

3. What sensory indications will occur if HME or HME manufacturing is present?
   - Answer: The eyes and respiratory tract often give the first indication that HME or its manufacture is present.
4. What are the four basic steps in HME production?
   a. Obtain the ingredients
   b. Mix the compounds
   c. Cook, cool, or dry the mixture
   d. Package mixture
5. Three common chemicals used in HME production? NOT including the fuels listed on slide 11.
   - Hydrogen Peroxide, Hexamine, Acetone, etc.

6. What are the two general classes of HME we've discussed?
   - Nitrates and Peroxides
7. Provide at least THREE fuels that HME can utilize?
   - Alum. powder, Icing sugar, Flour, Pepper, etc.
8. TRUE/FALSE: fertilizer grade AN can be used for HME?
   - TRUE, but it must be pulverized.

Slide 31: Questions

Instructor Note:

Ask the students if there are any questions or input about the material just covered in this module.

SECTION V. STUDENT EVALUATION

Testing Requirements	This material will be tested in Course Examination 2. You must receive a passing score of 80% on the written examination to complete this course.
Feedback Requirements	**Note:** Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students and questions about the test. Provide remedial training as needed.

Appendix A - Viewgraph Masters

Indicators of Homemade Explosive (HME)
071-FREBB004 / Version 02.0 ©

Sequence	Media Name	Media Type
0	Indicators of HME	PPTX

Appendix B - Assessment Statement and Assessment Plan

Assessment Statement: None.

Assessment Plan: None.

PRACTICAL EXERCISE(S)/SOLUTION(S) FOR LESSON 071-FREBB004 Version 02.0 ©

Appendix D - Student Handouts

Indicators of Homemade Explosive (HME)
071-FREBB004 / Version 02.0 ©

Sequence	Media Name	Media Type
None		

Indicators of Homemade Explosive (HME)

071-FREBB004 / Version 02.0 ©

DRAFT

1. The importance of this lesson: (Why)

Recognize indicators of Homemade Explosives (HME) manufacturing.

2. What we want our Soldiers to Achieve: (Outcomes/Standard)

Recognition must be IAW FM 3-34.210, and must achieve a score of 80% or greater on course examinations/rubrics. The recognition includes:

1. Defining Homemade Explosives (HME)
2. Recognizing the classes of HME
3. Recognizing indicators of HME

Learning Domain: Cognitive
Learning Level: Knowledge

3. Tasks to be taught

Task Number	Task Title	Task Type
031-627-3040	Provide Technical Advice on Chemical Warfare Agent (CWA) Precursors	Individual TAUGHT
091-89D-3417	Perform EOD Procedures on Home Made Explosives (HME) and Precursors	Individual TAUGHT

Additional Non-Standard Tasks

None

4. References:

Reference Number	Reference Title	Date
ATP 5-19 (Change 001 09/08/2014 78 Pages)	RISK MANAGEMENT http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/atp5_19.pdf	14 Apr 2014
DD FORM 2977	DELIBERATE RISK ASSESSMENT WORKSHEET	01 Jan 2014
FB (Safety) Form 385-1-E	Daily Risk Management Assessment Matrix	01 Oct 2013
FM 3-34.210	Explosive Hazards Operations	27 Mar 2007
FM 3-34.5	Environmental Considerations	16 Feb 2010
STP 3-CIED-SM-TG	Soldier's Manual and Trainer's Guide for Counter Improvised Explosive Device	09 Dec 2011
TC 9-21-01	SOLDIERS IMPROVISED EXPLOSIVE DEVICE (IED) AWARENESS GUIDE	28 May 2004

Additional Non-Standard References

None

5. Resources

TIME: Time of Instruction: 1 hr 30 mins

LAND: Classroom, Training Area, and Range Requirements

Id	Name
17120-M-1200-30	Classroom, Multipurpose, 1200 Square Feet, 30 Students
72114	Enlisted Barracks, Transient Training
74046	Consolidated Open Dining Facility
44224	Organizational Storage Building

AMMO: Ammunition Requirements

DODIC	Name
None	

MISC: Materiel Items and TADSS Requirements

Id	Name
2310-01-090-7709	Bus Transit 44 Passenger
4110-01-485-3548	Chest, Ice Storage, White, 162 Quart Capacity
5820-00-NSN	SCREEN, PROJECTION
5820-00-T93-6432	PROJECTOR, VIDEO, LCD EPSON ELP33 WITH REMOTE
5860-01-363-8730	Laser Pointer
5895-01-540-4543	Computer, Laptop
6530-01-290-9964	Litter, Folding, Rigid Pole
6545-01-532-3674	Medical Equipment Set, Combat Lifesaver, Version 2005, UA 245A
6665-01-381-3023	Wet Bulb-Globe Temperature Kit
6685-01-590-1047	Monitor, Heat Stress: Questemp 44
6760-00-985-6749	Tripod, Photographic
7021-01-C17-2297	PC Tablet, Data Entry: Galaxy Tab 2 WIFI 16GB Samsung
7110-00-T81-1805	BOARD, DRY ERASE
7240-00-098-3827	Can, Military

(Note: Asterisk before ID indicates a TADSS.)

Additional Non-Standard Resources

None

6. A possible technique to achieve the outcome:

None

7. Conduct AAR with Soldier and Cadre.

None

NOTE: Before presenting this lesson, Instructors must be thoroughly prepared by studying the appropriate lesson plan and identified reference material.