Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A01 **HOURS:** 16.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: SOILS

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	2.00	30 : 2		
IL	7.00	30 : 1		
PA	7.00	30 : 3		

MEDIA: AIO, CAL, CPU, DB, PPT, SH, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Given an unidentified soil sample, an SL-3 complete soil test kit and references, perform hasty soil analysis to obtain a two-letter USCS classification, CBR, and moisture content in accordance with MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . Given an SL-3 complete soil test kit and references, identify the tools and equipment used to obtain a two-letter USCS classification, CBR, and moisture content per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001a)

2 . Given an unidentified soil sample, an SL-3 complete soil test kit and references, identify the properties of soil to include; soil characteristics, soil formation and commonly used terms and acronyms when obtaining a two-letter USCS classification, CBR, and moisture content per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001b)

3 . Given an unidentified soil sample, an SL-3 complete soil test kit and references, conduct a field identification of soil to obtain a two-letter USCS classification per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001c)

4 . Given a specified location, specifications, an SL-3 complete soil test kit and references, perform California Bearing Ratio (CBR) test to determine if the bearing capacity is sufficient for the assigned specifications per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001d)

5 . Given a specified location, specifications, an SL-3 complete soil test kit and references, perform moisture content test(s) to determine if the moisture content meets the assigned specifications per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001e)

NOTE(S): This class covers proper soils analysis and necessary stabilization to support construction projects such as roads, sites, and airfields. Students will utilize the soils test kit and perform analysis of different types of soils during conduct of this class.

ORM Statement: Initial RAC=4, Residual RAC=5

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A01
TYPE: Task Oriented
CATEGORY: Training
TITLE: SOILS

HOURS: 16.00
INITIAL RAC:
RESIDUAL RAC:

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Field Data	MCRP 3-17A	
Materials Testing	MCRP 3-17.7H	
Military Soils Engineering	MCRP 3-17.7G	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A01XP **HOURS:** 4.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: SOILS PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	4.00	30 : 3		

MEDIA: AIO, CAL, PEC, SH, SO

TERMINAL LEARNING OBJECTIVE(S):

1. Given an unidentified soil sample, an SL-3 complete soil test kit and references, perform hasty soil analysis to obtain a two-letter USCS classification, CBR, and moisture content in accordance with MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001)

ENABLING LEARNING OBJECTIVE(S):

1. Given an SL-3 complete soil test kit and references, identify the tools and equipment used to obtain a two-letter USCS classification, CBR, and moisture content per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001a)
2. Given an unidentified soil sample, an SL-3 complete soil test kit and references, identify the properties of soil to include; soil characteristics, soil formation and commonly used terms and acronyms when obtaining a two-letter USCS classification, CBR, and moisture content per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001b)
3. Given an unidentified soil sample, an SL-3 complete soil test kit and references, conduct a field identification of soil to obtain a two-letter USCS classification per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001c)
4. Given a specified location, specifications, an SL-3 complete soil test kit and references, perform California Bearing Ratio (CBR) test to determine if the bearing capacity is sufficient for the assigned specifications per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001d)
5. Given a specified location, specifications, an SL-3 complete soil test kit and references, perform moisture content test(s) to determine if the moisture content meets the assigned specifications per the MCRP 3-17.7G Military Soils Engineering. (1371-HORZ-2001e)

NOTE(S): This exam will test knowledge and skill (performance based) on proper soils analysis (hasty) utilizing soil test kit and field analysis techniques.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Field Data	MCRP 3-17A	
Materials Testing	MCRP 3-17.7H	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A01XP
TYPE: Exam
CATEGORY: Training
TITLE: SOILS PERFORMANCE EXAM

HOURS: 4.00
INITIAL RAC:
RESIDUAL RAC:

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Military Soils Engineering	MCRP 3-17.7G	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A02 **HOURS:** 9.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: DRAINAGE

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	2.00	30 : 2		
IL	4.00	30 : 1		
PA	3.00	30 : 2		

MEDIA: AIO, CAL, CPU, DB, PPT, SH, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a drainage structure requirement, a map, and references, design expedient drainage structures to intercept, collect, and remove surface water flowing toward a designated area from adjacent areas in accordance with MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in the Theater of Operations. (1371-HORZ-2002)

ENABLING LEARNING OBJECTIVE(S):

1 . Given an existing all-weather stream, the requirement for a drainage structure, and references, calculate the area of waterway to provide adequate drainage per the MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in Theater of Operations. (1371-HORZ-2002a)

2 . Given a map, an area requiring a drainage structure, and references, calculate peak volume of storm water run off to provide adequate drainage per the MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in Theater of Operations. (1371-HORZ-2002b)

3 . Given an area waterway and references, determine the amount of culvert required to provide adequate drainage per the MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in Theater of Operations. (1371-HORZ-2002c)

4 . Given a volume of water to be drained and references, design a drainage system to provide adequate drainage per the MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in Theater of Operations. (1371-HORZ-2002d)

NOTE(S): This class will cover proper drainage estimations and construction (culverts). Also covered is ditching and check dam techniques needed for watershed diversions from roads, airfields, and other pertinent construction projects.

ORM Statement: There are no hazards associated with this class.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Construction Estimating	MCRP 3-17.7M	
Construction Project Management	MCRP 3-17.7F	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A02
TYPE: Task Oriented
CATEGORY: Training
TITLE: DRAINAGE

HOURS: 9.00
INITIAL RAC:
RESIDUAL RAC:

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Field Data	MCRP 3-17A	
Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations - Road Design	MCRP 3-17.7A	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A02XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: DRAINAGE WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	1.00	30 : 1		

MEDIA: CAL, SH, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a drainage structure requirement, a map, and references, design expedient drainage structures to intercept, collect, and remove surface water flowing toward a designated area from adjacent areas in accordance with MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in the Theater of Operations. (1371-HORZ-2002)

ENABLING LEARNING OBJECTIVE(S):

1 . Given an existing all-weather stream, the requirement for a drainage structure, and references, calculate the area of waterway to provide adequate drainage per the MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in Theater of Operations. (1371-HORZ-2002a)

2 . Given a map, an area requiring a drainage structure, and references, calculate peak volume of storm water run off to provide adequate drainage per the MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in Theater of Operations. (1371-HORZ-2002b)

3 . Given an area waterway and references, determine the amount of culvert required to provide adequate drainage per the MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in Theater of Operations. (1371-HORZ-2002c)

4 . Given a volume of water to be drained and references, design a drainage system to provide adequate drainage per the MCRP 3-17.7A Planning and Design of Roads, Airbases, and Heliports in Theater of Operations. (1371-HORZ-2002d)

NOTE(S): This knowledge based written exam tests the student's knowledge on drainage calculations and construction.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Construction Estimating	MCRP 3-17.7M	
Construction Project Management	MCRP 3-17.7F	
Engineer Field Data	MCRP 3-17A	
Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations - Road Design	MCRP 3-17.7A	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A03 **HOURS:** 12.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: WOODFRAME CONSTRUCTION

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 1		
IL	6.50	30 : 1		
PA	5.00	30 : 3		

MEDIA: AIO, CAL, CPU, DB, M, PPT, SCH, SH, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and references, layout wood frame structure to ensure that building corners are exactly 90 degrees; truss jigs are built to the specified pitch; the sum of stair stringer risers and treads is between 17 and 19 inches; and walls are level and plumb. (1371-VERT-2002)

ENABLING LEARNING OBJECTIVE(S):

1 . Provided construction blueprints/drawings, design specifications, and references, read construction blueprints/drawings to identify building dimensions, elevations, components, component location and design in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002a)

2 . Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, establish building lines using a batter board system ensuring that the building corners are exactly 90 degrees in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002b)

3 . Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, use survey equipment during construction as required ensuring that building components are square, level, and plumb in accordance with MCRP 3-17.7C Carpentry and applicable references. (1371-VERT-2002c)

4 . Provided construction blueprints/drawings, design specifications, and the references, identify floor components to determine the construction requirements in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002d)

5 . Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, layout floor components ensuring floor components are properly spaced, braced, straight, and squared to specifications and in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002e)

6 . Provided construction blueprints/drawings, design specifications, and references, identify wall components to determine the construction requirements in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002f)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A03 **HOURS:** 12.50

TYPE: Task Oriented **INITIAL RAC:**

CATEGORY: Training **RESIDUAL RAC:**

TITLE: WOODFRAME CONSTRUCTION

7 . Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, layout wall components ensuring wall components are properly spaced, level, straight, and plumb in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002g)

8 . Provided construction blueprints/drawings, design specifications, and references, identify truss/rafter components to determine the construction requirements in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002h)

9 . Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, layout truss components ensuring trusses are built to the specified pitch in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002i)

10 . Provided construction blueprints/drawings, design specifications, and references, identify stair components to determine the construction requirements in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002j)

11 . Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, layout stair components ensuring stairs meet design specifications equating to the sum of stair stringer risers and treads is between 17 and 19 inches in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002k)

NOTE(S): Class covers construction blueprints/drawings, wood frame structure layout, floor layout, wall layout, stair and truss layout. Students will also demonstrate proper use of tools and equipment, measurements, and simple estimations for typical military projects.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Basic Construction Techniques for Houses and Small Buildings	NAVPERS 0-486-20242-9	
Carpentry	MCRP 3-17.7C	
Construction Estimating	MCRP 3-17.7M	
Construction Print Reading in the Field	TM 5-704	
Modern Carpentry, 11 Edition Wagner/Smith	ModCarp 2008	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A03XP **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: WOODFRAME CONSTRUCTION PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	2.00	30 : 3		

MEDIA: AIO, CAL, HO, MU, PEC, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1. Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and references, layout wood frame structure to ensure that building corners are exactly 90 degrees; truss jigs are built to the specified pitch; the sum of stair stringer risers and treads is between 17 and 19 inches; and walls are level and plumb. (1371-VERT-2002)

ENABLING LEARNING OBJECTIVE(S):

1. Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, establish building lines using a batter board system ensuring that the building corners are exactly 90 degrees in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002b)
2. Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, use survey equipment during construction as required ensuring that building components are square, level, and plumb in accordance with MCRP 3-17.7C Carpentry and applicable references. (1371-VERT-2002c)
3. Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, layout floor components ensuring floor components are properly spaced, braced, straight, and squared to specifications and in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002e)
4. Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, layout wall components ensuring wall components are properly spaced, level, straight, and plumb in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002g)
5. Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, layout truss components ensuring trusses are built to the specified pitch in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002i)
6. Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and the references, layout stair components ensuring stairs meet design specifications equating to the sum of stair stringer risers and treads is between 17 and 19 inches in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002k)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A03XP **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: WOODFRAME CONSTRUCTION PERFORMANCE EXAM

NOTE(S): This exam will test the student's knowledge and skills (performance based) on construction blue print reading, building layout and woodframe component layout/construction. This exam will coincide with C-23A03 practical application.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Basic Construction Techniques for Houses and Small Buildings	NAVPERS 0-486-20242-9	
Carpentry	MCRP 3-17.7C	
Construction Print Reading in the Field	TM 5-704	
Modern Carpentry, 11 Edition Wagner/Smith	ModCarp 2008	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A03XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: WOODFRAME CONSTRUCTION WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	1.00	30 : 1		

MEDIA: CAL, SH, SO

TERMINAL LEARNING OBJECTIVE(S):

1. Provided a construction site, construction blueprints/drawings, design specifications, an engineer carpenter's kit, Class IV, and references, layout wood frame structure to ensure that building corners are exactly 90 degrees; truss jigs are built to the specified pitch; the sum of stair stringer risers and treads is between 17 and 19 inches; and walls are level and plumb. (1371-VERT-2002)

ENABLING LEARNING OBJECTIVE(S):

1. Provided construction blueprints/drawings, design specifications, and references, read construction blueprints/drawings to identify building dimensions, elevations, components, component location and design in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002a)
2. Provided construction blueprints/drawings, design specifications, and the references, identify floor components to determine the construction requirements in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002d)
3. Provided construction blueprints/drawings, design specifications, and references, identify wall components to determine the construction requirements in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002f)
4. Provided construction blueprints/drawings, design specifications, and references, identify truss/rafter components to determine the construction requirements in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002h)
5. Provided construction blueprints/drawings, design specifications, and references, identify stair components to determine the construction requirements in accordance with MCRP 3-17.7C Carpentry. (1371-VERT-2002j)

NOTE(S): This exam is scenario based and multiple choice/fill in blank written exam to test the student's knowledge in proper layout and construction of woodframe structures.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Basic Construction Techniques for Houses and Small Buildings	NAVPERS 0-486-20242-9	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A03XW
TYPE: Exam
CATEGORY: Training
TITLE: WOODFRAME CONSTRUCTION WRITTEN EXAM

HOURS: 1.00
INITIAL RAC:
RESIDUAL RAC:

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Carpentry	MCRP 3-17.7C	
Construction Estimating	MCRP 3-17.7M	
Construction Print Reading in the Field	TM 5-704	
Modern Carpentry, 11 Edition Wagner/Smith	ModCarp 2008	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A04 **HOURS:** 13.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: CONCRETE SLAB AND FORM CONSTRUCTION

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 2		
IL	4.50	30 : 1		
PA	8.00	30 : 3		

MEDIA: AIO, CAL, CPU, DB, PPT, SCH, SH, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided specifications, writing materials, a calculator, and references, design a concrete slab on grade to accommodate all dead and live loads considered and that design includes all reinforcement, joints and/or anchor bolts in accordance with the specifications and MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a construction directive, specifications, a list of cement types and the reference, identify the requirements for the project (materials, placement, strength, durability, etc) to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004a)

2 . Given a schematic and without references, identify the components of a concrete form per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004b)

3 . Given a construction directive and references, determine the rate of placement per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004c)

4 . Given a construction directive and references, determine the hydrostatic fluid pressure per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004d)

5 . Given a construction directive and references, adjust rate of placement (as required) per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004e)

6 . Given a construction directive and the reference, select the appropriate slump to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004f)

7 . Given a construction directive specifying desired slump, state the procedures to conduct a slump test to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004g)

8 . Given a construction directive and the reference, determine the slab classification to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004h)

9 . Given a construction directive and the reference, determine the minimum compressive strength required

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A04 **HOURS:** 13.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: CONCRETE SLAB AND FORM CONSTRUCTION

for a slab project to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004i)

10 . Given a construction directive and the reference, determine the flexural tensile stress for a slab project to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004j)

11 . Given a construction directive and the reference, determine the equivalent static load and correct as necessary to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004k)

12 . Given a construction directive and the reference, determine the slab thickness to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004l)

13 . Given a construction directive and the reference, determine the amount of cement required to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004m)

14 . Given a construction directive, construction drawings and/or blueprints, describe the procedures to erect concrete forms to meet the construction directive specifications per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004n)

15 . Given a construction directive, construction drawings and/or blueprints, describe the procedures to emplace reinforcement, joints, and anchors to meet the construction directive specifications per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004o)

NOTE(S): Class covers components of various concrete forms, analytical method of designing concrete slabs, constructing slab forms, and quality control.

ORM Statement: Initial RAC 4, Residual RAC 5.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Carpentry	MCRP 3-17.7C	
Concrete and Masonry	MCRP 3-17.7D	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A04XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: CONCRETE SLAB AND FORM CONSTRUCTION WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(RE)	0.50	30 : 1		
X(W)	1.50	30 : 1		

MEDIA: CAL, HO, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided specifications, writing materials, a calculator, and references, design a concrete slab on grade to accommodate all dead and live loads considered and that design includes all reinforcement, joints and/or anchor bolts in accordance with the specifications and MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a construction directive, specifications, a list of cement types and the reference, identify the requirements for the project (materials, placement, strength, durability, etc) to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004a)

2 . Given a schematic and without references, identify the components of a concrete form per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004b)

3 . Given a construction directive and references, determine the rate of placement per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004c)

4 . Given a construction directive and references, determine the hydrostatic fluid pressure per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004d)

5 . Given a construction directive and references, adjust rate of placement (as required) per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004e)

6 . Given a construction directive and the reference, select the appropriate slump to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004f)

7 . Given a construction directive specifying desired slump, state the procedures to conduct a slump test to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004g)

8 . Given a construction directive and the reference, determine the slab classification to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004h)

9 . Given a construction directive and the reference, determine the minimum compressive strength required for a slab project to meet the specifications of the construction directive per the MCRP 3-17.7D

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A04XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: CONCRETE SLAB AND FORM CONSTRUCTION WRITTEN EXAM

Concrete & Masonry. (1371-HORZ-2004i)

10 . Given a construction directive and the reference, determine the flexural tensile stress for a slab project to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004j)

11 . Given a construction directive and the reference, determine the equivalent static load and correct as necessary to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004k)

12 . Given a construction directive and the reference, determine the slab thickness to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004l)

13 . Given a construction directive and the reference, determine the amount of cement required to meet the specifications of the construction directive per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004m)

14 . Given a construction directive, construction drawings and/or blueprints, describe the procedures to erect concrete forms to meet the construction directive specifications per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004n)

15 . Given a construction directive, construction drawings and/or blueprints, describe the procedures to emplace reinforcement, joints, and anchors to meet the construction directive specifications per the MCRP 3-17.7D Concrete & Masonry. (1371-HORZ-2004o)

NOTE(S): Examination covers components of various concrete forms, analytical method of designing concrete slabs, constructing slab forms, and quality control.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Carpentry	MCRP 3-17.7C	
Concrete and Masonry	MCRP 3-17.7D	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A05 **HOURS:** 24.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: AIRFIELD DAMAGE REPAIR (ADR)

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	3.00	30 : 2		
IL	5.00	30 : 2		
PA	16.00	30 : 3		

MEDIA: AIO, C, CAL, CPU, DB, MU, PPT, SH, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given a damaged airfield, SL-3 complete airfield damage repair (ADR) kit, heavy equipment support, a borrow pit, personnel, and communications equipment, repair damaged airfields (ADR) to meet surface roughness criteria in order to establish a functional Minimum Operating Strip (MOS) capable of launching and recovering aircraft in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004)

2 . Provided a mission specifying number and/or type(s) of aircraft, DA Form 1711-R, engineer tools and equipment, EAF support, materials, and personnel, design Tactical Landing Zones (TLZ)/Expeditionary Airfields (EAF) to provide aircraft landing sites that meet structural and geometric design criteria for the type(s)/number(s) of aircraft anticipated for a TLZ, a surfaced EAF or an unsurfaced EAF per the mission specifications in accordance with MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations. (1371-MOBL-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a notional damaged airfield, list of personnel and equipment, and references, state the organization of a Damage Assessment Team (DAT) needed to perform damage assessment for repairing the airfield per MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004a)

2 . Given a notional damaged airfield, resources and references, conduct a mission analysis on the damaged airfield to identify repair activities needed to return airfield to operational state in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004b)

3 . Given a notional damaged airfield, NATO reference marking system sheet, list of personnel and equipment, and references, perform damage assessment needed for repairing the airfield to operational state per MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004c)

4 . Given a notional damaged airfield, unexploded ordnance (UXO) locations, NATO reference marking system sheet, list of personnel and equipment, and references, mark locations of UXO on the NATO reference marking system to annotate locations of ordnance in accordance with MCWP 3.21.1 Aviation Ground Support and MCRP 3-17.7D Explosive Hazards Operations. (1371-EOPS-2004d)

5 . Given a notional damaged airfield, NATO reference marking system sheet, proposed minimum operating strip (MOS) and references, record spall/crater damage to proposed MOS on standard NATO

LESSON ID: C-23A05 **HOURS:** 24.00

TYPE: Task Oriented **INITIAL RAC:**

CATEGORY: Training **RESIDUAL RAC:**

TITLE: AIRFIELD DAMAGE REPAIR (ADR)

reference marking system to annotate locations of damage in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004e)

6 . Given a notional damaged airfield, list of personnel and equipment, NATO reference marking system sheet, and references, record damage to airfield facilities on standard NATO reference marking system to annotate damage to existing facilities (aprons, buildings, etc.) in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004f)

7 . Given a notional damaged airfield, completed NATO reference marking system sheet, list of personnel and equipment, and references, provide estimates for resources required to conduct repairs on damaged airfield to return airfield to operational state in accordance with MCWP 3.21.1 Aviation Ground Support and other applicable reference materials. (1371-EOPS-2004g)

8 . Given an SL-3 complete Airfield Damage Repair (ADR) kit and without references, identify the components in an ADR Kit per the TM 11275A-OI/1 Airfield Damage Repair (ADR) Kit. (1371-EOPS-2004h)

9 . Given an SL-3 complete Airfield Damage Repair (ADR) kit and references, utilize necessary components in an ADR Kit without mishap to personnel or equipment to effect a repair and in accordance with TM 11275A-OI/1 Airfield Damage Repair (ADR) Kit. (1371-EOPS-2004i)

10 . Given an SL-3 complete airfield damage repair (ADR) kit, heavy equipment support, aggregate material, personnel, communications equipment, and references, repair spalls/craters on a damaged airfield in a manner to meet surface roughness criteria needed to receive identified aircraft type per the MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004j)

11 . Given an SL-3 complete airfield damage repair (ADR) kit, FRP panels, heavy equipment support, personnel, communications equipment and references, install FOD covers on repaired craters and/or spalls on a damaged airfield in a manner to meet specifications needed to receive identified aircraft type per the MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004k)

12 . Given a tactical scenario, a map, a specified area, list of personnel and equipment, and references, analyze the mission to determine landing surface (i.e. AM-2 Matting) requirements to support an expeditionary airfield based on the tactical situation per the MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations and AM-2 Airfield Mat and Accessories. (1371-MOBL-2001a)

13 . Given a tactical scenario involving a TLZ/EAF (FOB), a map, list of personnel and equipment, and references, analyze requirements needed to establish a ADR plan in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-MOBL-2001d)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A05 **HOURS:** 24.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: AIRFIELD DAMAGE REPAIR (ADR)

NOTE(S): Class covers ADR task organization, equipment, and repair for spalls and craters to establish a minimum operating strip on airfields. Students will receive hands-on ADR equipment to learn how to properly utilize the tools and repairing runway surfaces. AM-2 Matting will be introduced to the students for familiarity, planning and design per T&R event 1371-MOBL-2001 for Forward Operating Base (FOB) design.

ORM Statement: Initial RAC=3, Residual RAC=4

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
AM2 Airfield Mat and Accessories	NAVAIR 51-60A-1(_)	
Airfield Damage Repair	UFC 3-270-07	
Airfield Damage Repair (ADR) Kit	TM 11275A O!/1	
Aviation Ground Support	MCWP 3.21.1	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Reconnaissance	MCWP 3-17.4	
Expeditionary Airfield NATOPS Manual	NAVAIR 00-80T-115	
Explosive Hazards Operations	MCRP 3- 7.2D	
Navy/Marine Corps Runway Crater Repair (Interim Handbook), Navy		
Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations - Airfield and Heliport Design	MCRP 3-17.7B	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A05XP **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: AIRFIELD DAMAGE REPAIR (ADR) PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	2.00	30 : 3		

MEDIA: AIO, MU, PEC, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given a damaged airfield, SL-3 complete airfield damage repair (ADR) kit, heavy equipment support, a borrow pit, personnel, and communications equipment, repair damaged airfields (ADR) to meet surface roughness criteria in order to establish a functional Minimum Operating Strip (MOS) capable of launching and recovering aircraft in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004)

ENABLING LEARNING OBJECTIVE(S):

1 . Given an SL-3 complete Airfield Damage Repair (ADR) kit and without references, identify the components in an ADR Kit per the TM 11275A-OI/1 Airfield Damage Repair (ADR) Kit. (1371-EOPS-2004h)

2 . Given an SL-3 complete Airfield Damage Repair (ADR) kit and references, utilize necessary components in an ADR Kit without mishap to personnel or equipment to effect a repair and in accordance with TM 11275A-OI/1 Airfield Damage Repair (ADR) Kit. (1371-EOPS-2004i)

3 . Given an SL-3 complete airfield damage repair (ADR) kit, heavy equipment support, aggregate material, personnel, communications equipment, and references, repair spalls/craters on a damaged airfield in a manner to meet surface roughness criteria needed to receive identified aircraft type per the MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004j)

4 . Given an SL-3 complete airfield damage repair (ADR) kit, FRP panels, heavy equipment support, personnel, communications equipment and references, install FOD covers on repaired craters and/or spalls on a damaged airfield in a manner to meet specifications needed to receive identified aircraft type per the MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004k)

NOTE(S): Students will be placed into teams to demonstrate ADR equipment proficiency, repair spalls and craters, and installing FOD cover (if applicable). This is a master/non-master exam conducted in concert with practical application time in concept card C-23A05 and students will be held to standards per a performance checklist.

ORM Statement: Intitial RAC=3, Residual RAC=4

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
AM2 Airfield Mat and Accessories	NAVAIR 51-60A-1(_)	
Airfield Damage Repair	UFC 3-270-07	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A05XP **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: AIRFIELD DAMAGE REPAIR (ADR) PERFORMANCE EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Airfield Damage Repair (ADR) Kit	TM 11275A O!/1	
Navy/Marine Corps Runway Crater Repair (Interim Handbook), Navy		

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A05XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: AIRFIELD DAMAGE REPAIR (ADR) WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	1.00	30 : 1		

MEDIA: HO, SO

TERMINAL LEARNING OBJECTIVE(S):

1. Provided a mission specifying number and/or type(s) of aircraft, DA Form 1711-R, engineer tools and equipment, EAF support, materials, and personnel, design Tactical Landing Zones (TLZ)/Expeditionary Airfields (EAF) to provide aircraft landing sites that meet structural and geometric design criteria for the type(s)/number(s) of aircraft anticipated for a TLZ, a surfaced EAF or an unsurfaced EAF per the mission specifications in accordance with MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations. (1371-MOBL-2001)
2. Given a damaged airfield, SL-3 complete airfield damage repair (ADR) kit, heavy equipment support, a borrow pit, personnel, and communications equipment, repair damaged airfields (ADR) to meet surface roughness criteria in order to establish a functional Minimum Operating Strip (MOS) capable of launching and recovering aircraft in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004)

ENABLING LEARNING OBJECTIVE(S):

1. Given a notional damaged airfield, list of personnel and equipment, and references, state the organization of a Damage Assessment Team (DAT) needed to perform damage assessment for repairing the airfield per MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004a)
2. Given a notional damaged airfield, resources and references, conduct a mission analysis on the damaged airfield to identify repair activities needed to return airfield to operational state in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004b)
3. Given a notional damaged airfield, NATO reference marking system sheet, list of personnel and equipment, and references, perform damage assessment needed for repairing the airfield to operational state per MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004c)
4. Given a notional damaged airfield, unexploded ordnance (UXO) locations, NATO reference marking system sheet, list of personnel and equipment, and references, mark locations of UXO on the NATO reference marking system to annotate locations of ordnance in accordance with MCWP 3.21.1 Aviation Ground Support and MCRP 3-17.7D Explosive Hazards Operations. (1371-EOPS-2004d)
5. Given a notional damaged airfield, NATO reference marking system sheet, proposed minimum operating strip (MOS) and references, record spall/crater damage to proposed MOS on standard NATO reference marking system to annotate locations of damage in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004e)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A05XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: AIRFIELD DAMAGE REPAIR (ADR) WRITTEN EXAM

6 . Given a notional damaged airfield, list of personnel and equipment, NATO reference marking system sheet, and references, record damage to airfield facilities on standard NATO reference marking system to annotate damage to existing facilities (aprons, buildings, etc.) in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-EOPS-2004f)

7 . Given a notional damaged airfield, completed NATO reference marking system sheet, list of personnel and equipment, and references, provide estimates for resources required to conduct repairs on damaged airfield to return airfield to operational state in accordance with MCWP 3.21.1 Aviation Ground Support and other applicable reference materials. (1371-EOPS-2004g)

8 . Given a tactical scenario, a map, a specified area, list of personnel and equipment, and references, analyze the mission to determine landing surface (i.e. AM-2 Matting) requirements to support an expeditionary airfield based on the tactical situation per the MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations and AM-2 Airfield Mat and Accessories. (1371-MOBL-2001a)

9 . Given a tactical scenario involving a TLZ/EAF (FOB), a map, list of personnel and equipment, and references, analyze requirements needed to establish a ADR plan in accordance with MCWP 3.21.1 Aviation Ground Support. (1371-MOBL-2001d)

NOTE(S): This scenario based written exam will test students knowledge on ADR task organization, equipment, and repair for spalls and craters to establish a minimum operating strip on airfields. Also, students will be tested on TLZ/EAF (FOB) requirements.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
AM2 Airfield Mat and Accessories	NAVAIR 51-60A-1(_)	
Airfield Damage Repair	UFC 3-270-07	
Airfield Damage Repair (ADR) Kit	TM 11275A O!/1	
Aviation Ground Support	MCWP 3.21.1	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Reconnaissance	MCWP 3-17.4	
Expeditionary Airfield NATOPS Manual	NAVAIR 00-80T-115	
Explosive Hazards Operations	MCRP 3- 7.2D	
Navy/Marine Corps Runway Crater Repair (Interim Handbook), Navy		

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A05XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: AIRFIELD DAMAGE REPAIR (ADR) WRITTEN EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations - Airfield and Heliport Design	MCRP 3-17.7B	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A06 **HOURS:** 13.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: SURVIVABILITY POSITIONS DESIGN

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 1		
IL	6.00	30 : 1		
PA	6.00	30 : 2		

MEDIA: AIO, C, CAL, CPU, DB, M, PPT, SH, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1. Given a force protection requirement and references, design survivability positions to counteract the known effects of enemy direct and indirect fire weapons in accordance with MCWP 3-17.6 Survivability Operations. (1371-SURV-2001)
2. Given a rigging task to be performed, appropriate timbers, lumber, fasteners, tools and equipment, suitable rope for the task, and references, conduct rigging to meet the mission rigging requirements without incident in accordance with MCRP 3-17.7J Rigging Techniques (FM 5-125). (1371-EOPS-2009)

ENABLING LEARNING OBJECTIVE(S):

1. Given a rigging task to be performed, appropriate timbers, lumber, fasteners, tools and equipment, suitable rope for the task, and references, identify rigging requirements to meet the mission requirements safely per MCRP 3-17.7J Rigging Techniques. (1371-EOPS-2009a)
2. Given a rigging task to be performed, appropriate timbers, lumber, fasteners, tools and equipment, suitable rope for the task, and references, employ quality control and safety procedures during rigging operations to ensure the mission requirements are met without damage to eguipment or injury to personnel per MCRP 3-17.7J Rigging Techniques and MCRP 3-17A Engineer Field Data. (1371-EOPS-2009b)
3. Given a rigging task to be performed, appropriate timbers, lumber, fasteners, tools and equipment, suitable rope for the task, and references, construct lifting/anchor systems to ensure the mission requirements are met per MCRP 3-17.7J Rigging Techniques and MCRP 3-17A Engineer Field Data. (1371-EOPS-2009c)
4. Given a force protection requirement and references, design the appropriate bunker/shelter/fighting position to counteract the known effects of enemy direct, indirect fire, and explosive weapons in accordance with MCWP 3-17.6 Survivability Operations. (1371-SURV-2001a)
5. Given a force protection requirement and references, determine the resources (personnel and equipment) to construct positions (field fortification and urban) to counteract the known effects of enemy direct fire, indirect fire, and explosive weapons in accordance with MCWP 3-17.6 Survivability Operations. (1371-SURV-2001b)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A06 **HOURS:** 13.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: SURVIVABILITY POSITIONS DESIGN

6 . Given a force protection requirement and references, plan an Entry Control Point (ECP) to counteract the known effects of enemy direct fire, indirect fire, and explosive weapons in accordance with GTA 90-01-011 Joint Forward Operations Base (JFOB) Protection Handbook. (1371-SURV-2001c)

7 . Given a force protection requirement and references, select the materials needed to constuct positions (survivability and Entry Control Points) to counteract the known effects of enemy direct fire, indirect fire, and explosive weapons in accordance with MCWP 3-17.6 Survivability Operations and GTA 90-01-011 Joint Forward Operations Base (JFOB) Protection Handbook. (1371-SURV-2001d)

NOTE(S): Class covers task orgainzation, logistical planning, and construction of survivability positions, bunkers, shelters, and trenches. Also, students will be taught proper Entry Control Point (ECP) design. Rigging T&R tasks will be taught to standards to allow using ropes and block & tackle assets for lifting materials for hardening structures/positions in an urban environment.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Field Data	MCRP 3-17A	
Fighting Position Construction Infantry Leader's Reference Card	GTA 07-06-001	
Joint Entry Control Point & Escalation of Force Procedures	GTA 90-01-018	
Joint Forward Operations Base (JFOB) Protection Handbook	GTA 90-01-011	
Rigging Techniques, Procedures, and Applications	MCRP 3-17.7J	
Survivability Operations	MCWP 3-17.6	
Survivability Positions	GTA 05-08-001	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A06XP **HOURS:** 3.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: SURVIVABILITY POSITIONS DESIGN PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	3.00	30 : 2		

MEDIA: HO, PEC

TERMINAL LEARNING OBJECTIVE(S):

1 . Given a force protection requirement and references, design survivability positions to counteract the known effects of enemy direct and indirect fire weapons in accordance with MCWP 3-17.6 Survivability Operations. (1371-SURV-2001)

2 . Given a rigging task to be performed, appropriate timbers, lumber, fasteners, tools and equipment, suitable rope for the task, and references, conduct rigging to meet the mission rigging requirements without incident in accordance with MCRP 3-17.7J Rigging Techniques (FM 5-125). (1371-EOPS-2009)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a rigging task to be performed, appropriate timbers, lumber, fasteners, tools and equipment, suitable rope for the task, and references, identify rigging requirements to meet the mission requirements safely per MCRP 3-17.7J Rigging Techniques. (1371-EOPS-2009a)

2 . Given a rigging task to be performed, appropriate timbers, lumber, fasteners, tools and equipment, suitable rope for the task, and references, employ quality control and safety procedures during rigging operations to ensure the mission requirements are met without damage to eguipment or injury to personnel per MCRP 3-17.7J Rigging Techniques and MCRP 3-17A Engineer Field Data. (1371-EOPS-2009b)

3 . Given a rigging task to be performed, appropriate timbers, lumber, fasteners, tools and equipment, suitable rope for the task, and references, construct lifting/anchor systems to ensure the mission requirements are met per MCRP 3-17.7J Rigging Techniques and MCRP 3-17A Engineer Field Data. (1371-EOPS-2009c)

4 . Given a force protection requirement and references, design the appropriate bunker/shelter/fighting position to counteract the known effects of enemy direct, indirect fire, and explosive weapons in accordance with MCWP 3-17.6 Survivability Operations. (1371-SURV-2001a)

5 . Given a force protection requirement and references, determine the resources (personnel and equipment) to construct positions (field fortification and urban) to counteract the known effects of enemy direct fire, indirect fire, and explosive weapons in accordance with MCWP 3-17.6 Survivability Operations. (1371-SURV-2001b)

6 . Given a force protection requirement and references, plan an Entry Control Point (ECP) to counteract the known effects of enemy direct fire, indirect fire, and explosive weapons in accordance with GTA 90-01-

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A06XP **HOURS:** 3.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: SURVIVABILITY POSITIONS DESIGN PERFORMANCE EXAM

011 Joint Forward Operations Base (JFOB) Protection Handbook. (1371-SURV-2001c)

7 . Given a force protection requirement and references, select the materials needed to constuct positions (survivability and Entry Control Points) to counteract the known effects of enemy direct fire, indirect fire, and explosive weapons in accordance with MCWP 3-17.6 Survivability Operations and GTA 90-01-011 Joint Forward Operations Base (JFOB) Protection Handbook. (1371-SURV-2001d)

NOTE(S): Examination will cover task orgainzation, logistical planning, and construction of survivability positions, bunkers, shelters, and trenches derived from a scenario based mission. Students will estimate Bill of Materials (BOM) and logistical requirements to construct specific survivability positions. Rigging T&R tasks (TLOs &ELOs) will be tested by the student physically identifying and demonstrating proper construction procedures.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Field Data	MCRP 3-17A	
Fighting Position Construction Infantry Leader's Reference Card	GTA 07-06-001	
Joint Entry Control Point & Escalation of Force Procedures	GTA 90-01-018	
Joint Forward Operations Base (JFOB) Protection Handbook	GTA 90-01-011	
Rigging Techniques, Procedures, and Applications	MCRP 3-17.7J	
Survivability Operations	MCWP 3-17.6	
Survivability Positions	GTA 05-08-001	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A07 **HOURS:** 11.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE PLACEMENT

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 1		
IL	6.00	30 : 1		
PA	4.00	30 : 2		

MEDIA: AIO, CAL, CPU, DB, PPT, SH, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1. In an operating environment, given a mission, personnel, equipment, and references, conduct chainsaw operations to safely fell, limb and buck standing timber without injury to personnel and equipment in accordance with OSHA standards. (1371-EOPS-2008)
2. Given the proper authority to set booby traps, Class V, demolition tools, a blank DA Form 1355 and personal protective equipment (PPE), employ booby traps to slow the enemy's advance; deny the enemy use of facilities or material; warn of enemy approach; or deny the enemy use of terrain not covered by direct fire in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-CMOB-2003)
3. Provided an operations order, an area map, reconnaissance reports, personnel, engineer equipment and references, recommend obstacle placement to tie into existing natural or other manmade obstacles so that enemy movement/maneuvers are fixed, turned, blocked, or disrupted in support of the concept of operations per the commander's intent. (1371-CMOB-2001)

ENABLING LEARNING OBJECTIVE(S):

1. Given a tactical scenario, an operation order, a map, and references, conduct METT-T analysis to identify the effects of existing obstacles on enemy maneuver elements per the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001a)
2. Given a tactical scenario, an operation order, a map, and references, determine the type of obstacles required (expedient, deliberate and Vehicle Control Point) to support the obstacle intent per the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001b)
3. Given a tactical scenario, an operation order, a map, and references, determine the intent of reinforcing obstacles (expedient, deliberate and Vehicle Control Point) in support of the commander's intent per the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001c)
4. Given a tactical scenario, an operation order, a map, and references, determine the placement of reinforcing obstacles (expedient, deliberate and Vehicle Control Point) to support of the commander's intent per the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001d)
5. Given a tactical scenario, an obstacle plan and reference, identify the logistical requirements needed to construct obstacles per the reference per the MCRP 3-17A Engineer Field Data. (1371-CMOB-2001e)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A07 **HOURS:** 11.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE PLACEMENT

6 . Given an order to employ booby traps, a training scenario and a blank DA Form 1355, select locations for booby traps that will produce the maximum effect when activated per MCRP 3-17.2D Explosive Hazard Operations. (1371-CMOB-2003a)

7 . Given an order to employ booby traps/early warning devices and a training scenario, describe how to construct explosive/non-explosive booby traps or early warning devices per MCRP 3-17.2D Explosive Hazard Operations. (1371-CMOB-2003b)

8 . Given an order to employ booby traps/early warning devices, record booby traps/early warning devices per MCRP 3-17.2D Explosive Hazard Operations. (1371-CMOB-2003c)

9 . Given a tactical scenario, a map, engineer reconnaissance report forms, and a construction directive, state resources (personnel and equipment) required for felling standing timber to produce Class IV material for obstacle or survivability construction per USDA Forest Service Safe Timber Harvesting and DoDI 6055.1 DoD Safety and Occupational Health (SOH) Program. (1371-EOPS-2008a)

10 . Given a tactical scenario, a map, engineer reconnaissance report forms, and a construction directive, describe in writing how to conduct a site survey on existing trees that are required for producing Class IV material for obstacle or survivability construction per USDA Forest Service Safe Timber Harvesting. (1371-EOPS-2008b)

11 . Given a tactical scenario, a map, engineer reconnaissance report forms, and a construction directive, describe safety procedures needed when felling existing trees that are required for clearing areas or producing Class IV material for obstacle or survivability construction per USDA Forest Service Safe Timber Harvesting and DoDI 6055.1 DoD Safety and Occupational Health (SOH) Program. (1371-EOPS-2008c)

NOTE(S): Class consists of types of obstacles, logistics, resources, and proper placement of obstacles per the commander's intent mission requirements to fix, disrupt, delay or block enemy mobility. Students will plan and estimate friendly obstacles to include Vehicle Control Points (VCPs) per commander's intent to support MAGTF operations. Employment of boobytraps/early warning devices will also be covered. Leadership skills for chainsaw operations for felling tress in constructing obstacles will also be covered.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Obstacle Integration	MCWP 3-17.5	
DoD Safety and Occupational Health (SOH) Program	DoDI 6055.1	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A07 **HOURS:** 11.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE PLACEMENT

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineering Field Data	MCRP 3-17A	
Engineering Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Operational Terms and Graphics	MCRP 5-12A	
Rear Area Operations	MCWP 3-41.1	
Safe Timber Harvesting, Univ. New Hmpshire	USDA Forest Service, 1998	
Tool Kit, Pioneer Platoon	TM 11423A-OR	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A07XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE PLACEMENT WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	2.00	30 : 1		

MEDIA: CAL, HO, SO

TERMINAL LEARNING OBJECTIVE(S):

1. In an operating environment, given a mission, personnel, equipment, and references, conduct chainsaw operations to safely fell, limb and buck standing timber without injury to personnel and equipment in accordance with OSHA standards. (1371-EOPS-2008)
2. Given the proper authority to set booby traps, Class V, demolition tools, a blank DA Form 1355 and personal protective equipment (PPE), employ booby traps to slow the enemy's advance; deny the enemy use of facilities or material; warn of enemy approach; or deny the enemy use of terrain not covered by direct fire in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-CMOB-2003)
3. Provided an operations order, an area map, reconnaissance reports, personnel, engineer equipment and references, recommend obstacle placement to tie into existing natural or other manmade obstacles so that enemy movement/maneuvers are fixed, turned, blocked, or disrupted in support of the concept of operations per the commander's intent. (1371-CMOB-2001)

ENABLING LEARNING OBJECTIVE(S):

1. Given a tactical scenario, an operation order, a map, and references, conduct METT-T analysis to identify the effects of existing obstacles on enemy maneuver elements per the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001a)
2. Given a tactical scenario, an operation order, a map, and references, determine the type of obstacles required (expedient, deliberate and Vehicle Control Point) to support the obstacle intent per the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001b)
3. Given a tactical scenario, an operation order, a map, and references, determine the intent of reinforcing obstacles (expedient, deliberate and Vehicle Control Point) in support of the commander's intent per the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001c)
4. Given a tactical scenario, an operation order, a map, and references, determine the placement of reinforcing obstacles (expedient, deliberate and Vehicle Control Point) to support of the commander's intent per the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001d)
5. Given a tactical scenario, an obstacle plan and reference, identify the logistical requirements needed to construct obstacles per the reference per the MCRP 3-17A Engineer Field Data. (1371-CMOB-2001e)
6. Given an order to employ booby traps, a training scenario and a blank DA Form 1355, select locations for booby traps that will produce the maximum effect when activated per MCRP 3-17.2D Explosive

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A07XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE PLACEMENT WRITTEN EXAM

Hazard Operations. (1371-CMOB-2003a)

7 . Given an order to employ booby traps/early warning devices and a training scenario, describe how to construct explosive/non-explosive booby traps or early warning devices per MCRP 3-17.2D Explosive Hazard Operations. (1371-CMOB-2003b)

8 . Given an order to employ booby traps/early warning devices, record booby traps/early warning devices per MCRP 3-17.2D Explosive Hazard Operations. (1371-CMOB-2003c)

9 . Given a tactical scenario, a map, engineer reconnaissance report forms, and a construction directive, state resources (personnel and equipment) required for felling standing timber to produce Class IV material for obstacle or survivability construction per USDA Forest Service Safe Timber Harvesting and DoDI 6055.1 DoD Safety and Occupational Health (SOH) Program. (1371-EOPS-2008a)

10 . Given a tactical scenario, a map, engineer reconnaissance report forms, and a construction directive, describe in writing how to conduct a site survey on existing trees that are required for producing Class IV material for obstacle or survivability construction per USDA Forest Service Safe Timber Harvesting. (1371-EOPS-2008b)

11 . Given a tactical scenario, a map, engineer reconnaissance report forms, and a construction directive, describe safety procedures needed when felling existing trees that are required for clearing areas or producing Class IV material for obstacle or survivability construction per USDA Forest Service Safe Timber Harvesting and DoDI 6055.1 DoD Safety and Occupational Health (SOH) Program. (1371-EOPS-2008c)

NOTE(S): Scenario driven test (knowledge based) on types of obstacles, logistics, resources, and proper placement of obstacles per the commander's intent and mission requirements to fix, disrupt, delay or block enemy mobility. Explosive/Non-explosive boobytraps/early warning device employment will also be tested. Testing items on leadership for chainsaw operations is also included in this exam.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Obstacle Integration	MCWP 3-17.5	
DoD Safety and Occupational Health (SOH) Program	DoDI 6055.1	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	
Engineering Field Data	MCRP 3-17A	
Engineering Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX A - GENERAL ENGINEERING

LESSON ID: C-23A07XW
TYPE: Exam
CATEGORY: Training
TITLE: OBSTACLE PLACEMENT WRITTEN EXAM

HOURS: 2.00
INITIAL RAC:
RESIDUAL RAC:

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Explosives and Demolitions	MCRP 3-17.7L	
Operational Terms and Graphics	MCRP 5-12A	
Rear Area Operations	MCWP 3-41.1	
Safe Timber Harvesting, Univ. New Hmpshire	USDA Forest Service, 1998	
Tool Kit, Pioneer Platoon	TM 11423A-OR	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX B - ENGINEER RECONNAISSANCE

LESSON ID: C-23B01 **HOURS:** 34.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ENGINEER RECONNAISSANCE

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.50	30 : 1		
IL	8.00	30 : 1		
PA	25.00	30 : 3		

MEDIA: AIO, CAL, CPU, DB, MAPS, PPT, SH, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a mission, maps, personnel and equipment, appropriate reconnaissance reporting forms, overlay material, and references, conduct engineer reconnaissance to classify roads, routes, and bridges; evaluate tunnels, fords, and ferry sites; identify obstacles; bypasses; and record relevant engineer information on the appropriate reconnaissance forms and transferred to a map overlay using engineer/tactical symbols. (1371-RECN-2001)

2 . Provided a mission specifying number and/or type(s) of aircraft, DA Form 1711-R, engineer tools and equipment, EAF support, materials, and personnel, design Tactical Landing Zones (TLZ)/Expeditionary Airfields (EAF) to provide aircraft landing sites that meet structural and geometric design criteria for the type(s)/number(s) of aircraft anticipated for a TLZ, a surfaced EAF or an unsurfaced EAF per the mission specifications in accordance with MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations. (1371-MOBL-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a tactical scenario, a map, engineer reconnaissance report forms, a construction directive, and references, as a member of a team, conduct a site reconnaissance on selected terrain to determine if the area meets the criteria needed for a TLZ/EAF (FOB) per the MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations. (1371-MOBL-2001b)

2 . Given a tactical scenario, a map, engineer reconnaissance report forms, a construction directive, and references, as a member of a team, design a TLZ/EAF (FOB) based on mission directives and site reconnaissance information per the MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations. (1371-MOBL-2001c)

3 . Given a tactical scenario, a mission, a route, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, classify a route using route classification formula per MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001a)

4 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, classify a road, identifying all restrictive features on DA Form 1248 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001b)

COMBAT ENGINEER NCO

Concept Card Report

ANNEX B - ENGINEER RECONNAISSANCE

LESSON ID: C-23B01 **HOURS:** 34.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ENGINEER RECONNAISSANCE

5 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, reconnoiter a river/stream for crossing operations annotating all critical information on DA Form 7398 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001c)

6 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, reconnoiter a fording site, annotating all critical information on DA Form 1251 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001d)

7 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, evaluate a ferrying site, annotating all critical information on DA Form 1252 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001e)

8 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, reconnoiter a tunnel/overhead restrictive site, annotating all critical information on DA Form 1250 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001f)

9 . Given a tactical scenario, a mission, a bridge, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, reconnoiter a bridge, annotating all critical information on DA Form 1249 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001g)

10 . Given a tactical situation, critical bridge dimensions, GTA 05-07-013, DA Form 1249, a calculator and references, classify the bridge to determine the military load classification, noting any special restrictions in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001h)

11 . Given a tactical scenario, a mission, mock training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, evaluate an urban environment, annotating above and below ground structures, infrastructure facilities, and other pertinent information in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001i)

12 . With the aid of references, given completed engineer reconnaissance forms, overlay sheet and references, create a map overlay utilizing the DA Form 1711-R and correct engineer reconnaissance symbols in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001j)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX B - ENGINEER RECONNAISSANCE

LESSON ID: C-23B01 **HOURS:** 34.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ENGINEER RECONNAISSANCE

NOTE(S): Class consists of providing the students with the knowledge of the different facets of engineer reconnaissance and how to properly conduct, report, and task organize for missions to support MAGTF operations. ENFIRE characteristics and capabilities will be demonstated to the students during demonstation time.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Coordinated Scale and Protractor	GTA 05-02-012	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Reconnaissance	GTA 5-2-5	
Engineer Reconnaissance	MCWP 3-17.4	
Engineering Operations	MCWP 3-17	
Expeditionary Airfield NATOPS Manual	NAVAIR 00-80T-115	
Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations - Airfield and Heliport Design	MCRP 3-17.7B	
Rapid Field Classification Booklet	GTA 05-07-013	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX B - ENGINEER RECONNAISSANCE

LESSON ID: C-23B01XP **HOURS:** 4.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ENGINEER RECONNAISSANCE PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	4.00	30 : 3		

MEDIA: AIO, CPU, DB, MAPS, PEC, PPT, SMB, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a mission specifying number and/or type(s) of aircraft, DA Form 1711-R, engineer tools and equipment, EAF support, materials, and personnel, design Tactical Landing Zones (TLZ)/Expeditionary Airfields (EAF) to provide aircraft landing sites that meet structural and geometric design criteria for the type(s)/number(s) of aircraft anticipated for a TLZ, a surfaced EAF or an unsurfaced EAF per the mission specifications in accordance with MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations. (1371-MOBL-2001)

2 . Provided a mission, maps, personnel and equipment, appropriate reconnaissance reporting forms, overlay material, and references, conduct engineer reconnaissance to classify roads, routes, and bridges; evaluate tunnels, fords, and ferry sites; identify obstacles; bypasses; and record relevant engineer information on the appropriate reconnaissance forms and transferred to a map overlay using engineer/tactical symbols. (1371-RECN-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a tactical scenario, a map, engineer reconnaissance report forms, a construction directive, and references, as a member of a team, conduct a site reconnaissance on selected terrain to determine if the area meets the criteria needed for a TLZ/EAF (FOB) per the MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations. (1371-MOBL-2001b)

2 . Given a tactical scenario, a map, engineer reconnaissance report forms, a construction directive, and references, as a member of a team, design a TLZ/EAF (FOB) based on mission directives and site reconnaissance information per the MCRP 3-17.7B Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations. (1371-MOBL-2001c)

3 . Given a tactical scenario, a mission, a route, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, classify a route using route classification formula per MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001a)

4 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, classify a road, identifying all restrictive features on DA Form 1248 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001b)

5 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, reconnoiter a

LESSON ID: C-23B01XP **HOURS:** 4.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ENGINEER RECONNAISSANCE PERFORMANCE EXAM

river/stream for crossing operations annotating all critical information on DA Form 7398 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001c)

6 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, reconnoiter a fording site, annotating all critical information on DA Form 1251 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001d)

7 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, evaluate a ferrying site, annotating all critical information on DA Form 1252 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001e)

8 . Given a tactical scenario, a mission, training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, reconnoiter a tunnel/overhead restrictive site, annotating all critical information on DA Form 1250 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001f)

9 . Given a tactical scenario, a mission, a bridge, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, reconnoiter a bridge, annotating all critical information on DA Form 1249 in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001g)

10 . Given a tactical situation, critical bridge dimensions, GTA 05-07-013, DA Form 1249, a calculator and references, classify the bridge to determine the military load classification, noting any special restrictions in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001h)

11 . Given a tactical scenario, a mission, mock training area, map of area, GTA 5-2-5, blank engineer forms, compass, measuring device, engineer reconnaissance equipment, and references, evaluate an urban environment, annotating above and below ground structures, infrastructure facilities, and other pertinent information in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001i)

12 . With the aid of references, given completed engineer reconnaissance forms, overlay sheet and references, create a map overlay utilizing the DA Form 1711-R and correct engineer reconnaissance symbols in accordance with MCWP 3-14.4 Engineer Reconnaissance. (1371-RECN-2001j)

NOTE(S): Examination tests the student's knowledge of engineer reconnaissance on proper conduct, report, and task organizations for area , zone, and route reconnaissance. Students will be placed into squad teams and perform various scenario based missions and submit required reports based on the respective reconnaissance mission.

ORM Statement: Initial RAC=4, Residual RAC=5

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX B - ENGINEER RECONNAISSANCE

LESSON ID: C-23B01XP **HOURS:** 4.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ENGINEER RECONNAISSANCE PERFORMANCE EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Bridge Classification Booklet	GTA 5-7-13	
Coordinated Scale and Protractor	GTA 05-02-012	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Reconnaissance	GTA 5-2-5	
Engineer Reconnaissance	MCWP 3-17.4	
Engineering Operations	MCWP 3-17	
Expeditionary Airfield NATOPS Manual	NAVAIR 00-80T-115	
Planning and Design of Roads, Airfields, and Heliports in the Theater of Operations - Airfield and Heliport Design	MCRP 3-17.7B	
Rapid Field Classification Booklet	GTA 05-07-013	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C01 **HOURS:** 12.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: MEDIUM GIRDER BRIDGE

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
IL	4.00	30 : 1		
PA	8.00	30 : 4		

MEDIA: AIO, C, CAL, CPU, DB, M, PPT, SH, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . As a designated bridge master, provided a completed MGB Pro Forma, a gap, Medium Girder Bridge set, tools, a launch vehicle, personnel and references, manage employment of the Medium Girder Bridge (MGB) to meet design specifications and intended bridge classification per the Pro Forma, while observing safety precautions and technical specifications during build, boom and launch in accordance with TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a scenario involving the installation/retrieval of a Medium Girder Bridge (MGB) and references, select required safety measures associated with launching/retrieving the bridge per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002a)

2 . Given a scenario involving the installation of a Medium Girder Bridge (MGB), and references, identify in writing the characteristics of the bridge per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002b)

3 . Given a Medium Girder Bridge (MGB) configuration and references, identify in writing the construction sequence to install the bridge per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002c)

4 . As a member of a team, given a Medium Girder Bridge (MGB) configuration, a completed pro forma worksheet, bridge components, a dry gap training area, personnel, tools, equipment and references, install the bridge to meet Military Load Classification (MLC) specifications per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002d)

5 . As a member of a team, given an assembled Medium Girder Bridge (MGB), bridge pallets, a dry gap training area, personnel, tools, equipment and references, retrieve the bridge and palletize the components per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002e)

NOTE(S): Class covers reconnaissance, planning, and construction of the Medium Girder Bridge for mobility support of the MAGTF.

ORM Statement: Initial RAC=2, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C01 **HOURS:** 12.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: MEDIUM GIRDER BRIDGE

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Field Data	MCRP 3-17A	
Link Reinforcement Set	TM 5-5420-212-12-1	
Medium Girder Bridge	TM 5-5420-212-12	
Operator's Manual Medium Girder Bridge	TM 08676A-10/1-1	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C01XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: MEDIUM GIRDER BRIDGE PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	8.00	30 : 4		

MEDIA: AIO, PEC, SH, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . As a designated bridge master, provided a completed MGB Pro Forma, a gap, Medium Girder Bridge set, tools, a launch vehicle, personnel and references, manage employment of the Medium Girder Bridge (MGB) to meet design specifications and intended bridge classification per the Pro Forma, while observing safety precautions and technical specifications during build, boom and launch in accordance with TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002)

ENABLING LEARNING OBJECTIVE(S):

1 . As a member of a team, given a Medium Girder Bridge (MGB) configuration, a completed pro forma worksheet, bridge components, a dry gap training area, personnel, tools, equipment and references, install the bridge to meet Military Load Classification (MLC) specifications per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002d)

2 . As a member of a team, given an assembled Medium Girder Bridge (MGB), bridge pallets, a dry gap training area, personnel, tools, equipment and references, retrieve the bridge and palletize the components per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002e)

NOTE(S): This exam will test student's knowledge and skill (performance based) on construction of the Medium Girder Bridge. Student's will be placed as crew members and bridge master for construction and recovery of MGB.

ORM Statement: Initial RAC=2, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Field Data	MCRP 3-17A	
Link Reinforcement Set	TM 5-5420-212-12-1	
Medium Girder Bridge	TM 5-5420-212-12	
Operator's Manual Medium Girder Bridge	TM 08676A-10/1-1	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C01XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: MEDIUM GIRDER BRIDGE WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	1.00	30 : 1		

MEDIA: CAL, SH, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . As a designated bridge master, provided a completed MGB Pro Forma, a gap, Medium Girder Bridge set, tools, a launch vehicle, personnel and references, manage employment of the Medium Girder Bridge (MGB) to meet design specifications and intended bridge classification per the Pro Forma, while observing safety precautions and technical specifications during build, boom and launch in accordance with TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a scenario involving the installation/retrieval of a Medium Girder Bridge (MGB) and references, select required safety measures associated with launching/retrieving the bridge per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002a)

2 . Given a scenario involving the installation of a Medium Girder Bridge (MGB), and references, identify in writing the characteristics of the bridge per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002b)

3 . Given a Medium Girder Bridge (MGB) configuration and references, identify in writing the construction sequence to install the bridge per the TM 5-5420-212-12 Medium Girder Bridge. (1371-MOBL-2002c)

NOTE(S): This knowledge based written exam (scenario) will test students knowledge on reconnaissance, planning, and construction of the Medium Girder Bridge for mobility support of the MAGTF. It is a companion piece to the C-23C01XP and ensures that all students understand all aspects of MGB employment regardless of billet held during performance exam.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Field Data	MCRP 3-17A	
Link Reinforcement Set	TM 5-5420-212-12-1	
Medium Girder Bridge	TM 5-5420-212-12	
Operator's Manual Medium Girder Bridge	TM 08676A-10/1-1	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C02 **HOURS:** 16.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IRB AND RAFTING OPERATIONS

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
IL	6.50	30 : 1		
PA	9.50	30 : 4		

MEDIA: AIO, CAL, CPU, DB, LJ, PPT, SH, SMB, SO, WATER

TERMINAL LEARNING OBJECTIVE(S):

1 . As a designated raft commander, provided mission specifications, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools, motor transport support, personnel, personal protective equipment (PPE), and references, manage military rafting operations to provide force mobility while maintaining proper speed and adhering to navigational and operational safety requirements in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005)

2 . As a float bridge master, given a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE), and references, manage the employment of the Improved Ribbon Bridge (IRB) to provide force mobility, employing the IRB within the time frame listed in the design criteria, while observing safety precautions in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004)

Downgrade Justification: MCES currently possesses only 5 IRB interior bays and 2 IRB ramp bays for training. Assets on hand is not enough to construct a bank to bank span at Courthouse Bay location. Students will be instructed on construction, positioning and anchoring techniques for continual span IRB.

3 . Provided a body of water, a bridge erection boat, tools, personnel, personal protective equipment (PPE), and the reference, operate Bridge Erection Boat (BEB) using controls to maneuver 360 degrees around a stationary buoy while maintaining a 1 yard radius; perform a series of pier touches; and a pier side docking maneuver, all without damage to equipment while observing all safety and navigational precautions in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a Bridge Erection Boat (BEB) and without reference, identify major components of the boat in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003a)

2 . Given a Bridge Erection Boat (BEB) and without reference, perform operator maintenance on the boat in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003b)

3 . Given a Bridge Erection Boat (BEB), launching/retrieving vehicle references and as a member of a team,

LESSON ID: C-23C02 **HOURS:** 16.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IRB AND RAFTING OPERATIONS

launch/retrieve the boat in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003c)

4 . Without the aid of references, state the characteristics of the Bridge Erection Boat (BEB) in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003d)

5 . Without the aid of references, state the safety considerations for navigating the Bridge Erection Boat (BEB) in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003e)

6 . Without the aid of references, describe the different methods to launch the Bridge Erection Boat (BEB) in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003f)

7 . Given a Bridge Erection Boat (BEB), safety equipment, and reference, operate the boat while observing all safety precautions in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003g)

8 . Provided a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) and references, determine the requirements to employ the IRB in accordance with mission, site conditions, and TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004a)

9 . Provided a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) and references, describe the construction sequence to employ the IRB in accordance TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004b)

10 . Provided a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) and references, select the safety measures to employ the IRB in accordance TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004c)

11 . Provided a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) references, and as a member of a team, install the IRB in accordance TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004d)

12 . Provided an installed IRB, a wet gap crossing site, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) references, and as a member of a team, retrieve the IRB in accordance TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004e)

13 . Given a wet gap training area, Improved Ribbon Bridge (IRB) interior and ramp bays, Bridge Erection

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C02 **HOURS:** 16.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IRB AND RAFTING OPERATIONS

Boats (BEB), motor transport support, tools and equipment, as a member of a team, and without references, assemble a ribbon raft in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005a)

14 . Given a wet gap crossing site, a completed Improved Ribbon Bridge (IRB) raft, Bridge Erection Boats (BEB), motor transport support, tools and equipment, as a member of a team, and without references, maneuver the ribbon raft in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005b)

15 . Given a wet gap crossing site, a completed Improved Ribbon Bridge (IRB) raft, Bridge Erection Boats (BEB), motor transport support, tools and equipment, as a member of a team, and without references, load/unload a vehicle on/off the ribbon raft in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005c)

16 . Given a tactical rafting scenario and references, determine the time required to cross the gap in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005d)

17 . Given a tactical rafting scenario and references, identify in writing the characteristics of the ribbon raft in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005e)

NOTE(S): Class covers reconnaissance, planning, and construction of the Improved Ribbon Bridge (IRB) and Improved Float Bridge (IFB) for bridging/rafting support of the MAGTF. Students will demonstrate proper construction and recovery techniques under simulated conditions. Bridge Erection Boat (BEB) MK-3 will also be covered during this period of instruction.

ORM Statement: Initial RAC=2, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Bridge Erection Boat (MKIII)Operator's Manual	TM 10020C-OI	
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	
Improved Ribbon Bridge (IRB) Operators Manual	TM 11518A-OR	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C02XP **HOURS:** 13.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IRB AND RAFTING OPERATIONS PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	13.00	30 : 4		

MEDIA: AIO, LJ, PEC, SH, SO, WATER

TERMINAL LEARNING OBJECTIVE(S):

1 . As a designated raft commander, provided mission specifications, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools, motor transport support, personnel, personal protective equipment (PPE), and references, manage military rafting operations to provide force mobility while maintaining proper speed and adhering to navigational and operational safety requirements in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005)

2 . As a float bridge master, given a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE), and references, manage the employment of the Improved Ribbon Bridge (IRB) to provide force mobility, employing the IRB within the time frame listed in the design criteria, while observing safety precautions in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004)

Downgrade Justification: MCES currently possesses only 5 IRB interior bays and 2 IRB ramp bays for training. Assets on hand is not enough to construct a bank to bank span at Courthouse Bay location. Students will be instructed on construction, positioning and anchoring techniques for continual span IRB.

3 . Provided a body of water, a bridge erection boat, tools, personnel, personal protective equipment (PPE), and the reference, operate Bridge Erection Boat (BEB) using controls to maneuver 360 degrees around a stationary buoy while maintaining a 1 yard radius; perform a series of pier touches; and a pier side docking maneuver, all without damage to equipment while observing all safety and navigational precautions in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a Bridge Erection Boat (BEB) and without reference, perform operator maintenance on the boat in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003b)

2 . Given a Bridge Erection Boat (BEB), launching/retrieving vehicle references and as a member of a team, launch/retrieve the boat in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003c)

3 . Given a Bridge Erection Boat (BEB), safety equipment, and reference, operate the boat while observing all safety precautions in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection

LESSON ID: C-23C02XP **HOURS:** 13.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IRB AND RAFTING OPERATIONS PERFORMANCE EXAM

(MKIII). (1371-MOBL-2003g)

4 . Provided a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) references, and as a member of a team, install the IRB in accordance TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004d)

5 . Provided an installed IRB, a wet gap crossing site, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) references, and as a member of a team, retrieve the IRB in accordance TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004e)

6 . Given a wet gap training area, Improved Ribbon Bridge (IRB) interior and ramp bays, Bridge Erection Boats (BEB), motor transport support, tools and equipment, as a member of a team, and without references, assemble a ribbon raft in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005a)

7 . Given a wet gap crossing site, a completed Improved Ribbon Bridge (IRB) raft, Bridge Erection Boats (BEB), motor transport support, tools and equipment, as a member of a team, and without references, maneuver the ribbon raft in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005b)

8 . Given a wet gap crossing site, a completed Improved Ribbon Bridge (IRB) raft, Bridge Erection Boats (BEB), motor transport support, tools and equipment, as a member of a team, and without references, load/unload a vehicle on/off the ribbon raft in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005c)

NOTE(S): This exam (performance based) will cover construction of the Improved Ribbon Bridge (IRB) and Improved Float Bridge (IFB) for bridging/rafting support of the MAGTF. Students will be tested on proper construction and recovery techniques under simulated conditions. Bridge Erection Boat (BEB) MK-3 operations will also be covered during this examination.

ORM Statement: Initial RAC=2, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Bridge Erection Boat (MKIII)Operator's Manual	TM 10020C-OI	
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	
Improved Ribbon Bridge (IRB) Operators Manual	TM 11518A-OR	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C02XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IRB AND RAFTING OPERATIONS WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	2.00	30 : 1		

MEDIA: CAL, HO, SH, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . As a designated raft commander, provided mission specifications, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools, motor transport support, personnel, personal protective equipment (PPE), and references, manage military rafting operations to provide force mobility while maintaining proper speed and adhering to navigational and operational safety requirements in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005)

2 . As a float bridge master, given a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE), and references, manage the employment of the Improved Ribbon Bridge (IRB) to provide force mobility, employing the IRB within the time frame listed in the design criteria, while observing safety precautions in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004)

Downgrade Justification: MCES currently possesses only 5 IRB interior bays and 2 IRB ramp bays for training. Assets on hand is not enough to construct a bank to bank span at Courthouse Bay location. Students will be instructed on construction, positioning and anchoring techniques for continual span IRB.

3 . Provided a body of water, a bridge erection boat, tools, personnel, personal protective equipment (PPE), and the reference, operate Bridge Erection Boat (BEB) using controls to maneuver 360 degrees around a stationary buoy while maintaining a 1 yard radius; perform a series of pier touches; and a pier side docking maneuver, all without damage to equipment while observing all safety and navigational precautions in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a Bridge Erection Boat (BEB) and without reference, identify major components of the boat in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003a)

2 . Without the aid of references, state the characteristics of the Bridge Erection Boat (BEB) in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003d)

3 . Without the aid of references, state the safety considerations for navigating the Bridge Erection Boat (BEB) in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003e)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX C - MILITARY BRIDGING

LESSON ID: C-23C02XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IRB AND RAFTING OPERATIONS WRITTEN EXAM

4 . Without the aid of references, describe the different methods to launch the Bridge Erection Boat (BEB) in accordance with TM 10020C-OI Operator's Manual Boat, Bridge Erection (MKIII). (1371-MOBL-2003f)

5 . Provided a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) and references, determine the requirements to employ the IRB in accordance with mission, site conditions, and TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004a)

6 . Provided a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) and references, describe the construction sequence to employ the IRB in accordance TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004b)

7 . Provided a complete IRB design, a wet gap crossing site, IRB components, bridge erection boats, fuel, IRB tools and equipment, motor transport support, personnel, personal protective equipment (PPE) and references, select the safety measures to employ the IRB in accordance TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2004c)

8 . Given a tactical rafting scenario and references, determine the time required to cross the gap in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005d)

9 . Given a tactical rafting scenario and references, identify in writing the characteristics of the ribbon raft in accordance with TM 11518A-OR Improve Ribbon Bridge (IRB) Operator's Manual. (1371-MOBL-2005e)

NOTE(S): This knowledge based written exam (scenario) will test students knowledge on reconnaissance, planning, and construction of the Improved Ribbon Bridge (IRB) and Improved Float Bridge (IFB) for bridging/rafting support of the MAGTF. Bridge Erection Boat (BEB) MK-3 will also be tested. It is a companion piece to the C-23C02XP and ensures that all students understand all aspects of IRB employment regardless of billet held during performance exam.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Bridge Erection Boat (MKIII)Operator's Manual	TM 10020C-OI	
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	
Improved Ribbon Bridge (IRB) Operators Manual	TM 11518A-OR	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D01 **HOURS:** 11.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: EXPLOSIVE OBSTACLES WARFARE

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 1		
IL	5.00	30 : 1		
PA	5.00	30 : 3		

MEDIA: 782 GEAR, AIO, CPU, DB, FLAK, HELMET, PPT, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided an operations order, an area map, reconnaissance reports, personnel, engineer equipment and references, recommend obstacle placement to tie into existing natural or other manmade obstacles so that enemy movement/maneuvers are fixed, turned, blocked, or disrupted in support of the concept of operations per the commander's intent. (1371-CMOB-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a tactical scenario, an obstacle plan and references, determine type of explosive obstacle needed per concept of operation, commander's intent and in accordance with the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001f)

2 . Given a tactical scenario, an obstacle plan, personnel, specified materials, engineer equipment and references, describe in writing the procedures to emplace explosive obstacles needed to fix, turn, block, or disrupt per concept of operation, commander's intent and in accordance with the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001g)

3 . Given a tactical scenario, an obstacle plan, personnel, engineer equipment, safeties, and references, describe in writing the procedures to properly recover obstacle(s) by returning emplaced area to natural state and accounting for safety of all personnel per concept of operation, commander's intent and in accordance with the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001h)

4 . Given a tactical scenario, explosive obstacle data, applicable engineer forms and reports, protractor, ruler, and pencil, record explosive obstacle(s) data per MCRP 3-17B Engineer Forms and Reports. (1371-CMOB-2001i)

NOTE(S): This class will cover explosive obstacle warfare (US and foreign mines/minefields). The students will be instructed on conduct and logistics involved with constructing and emplacing explosive obstacles. Also, minefield recognition and make up will be covered.

ORM Statement: No hazards associated with this lesson.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D01 **HOURS:** 11.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: EXPLOSIVE OBSTACLES WARFARE

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Obstacle Integration	MCWP 3-17.5	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Operational Terms and Graphics	MCRP 5-12A	
Rear Area Operations	MCWP 3-41.1	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D01XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: EXPLOSIVE OBSTACLE WARFARE WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	2.00	30 : 2		

MEDIA: HO, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided an operations order, an area map, reconnaissance reports, personnel, engineer equipment and references, recommend obstacle placement to tie into existing natural or other manmade obstacles so that enemy movement/maneuvers are fixed, turned, blocked, or disrupted in support of the concept of operations per the commander's intent. (1371-CMOB-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a tactical scenario, an obstacle plan and references, determine type of explosive obstacle needed per concept of operation, commander's intent and in accordance with the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001f)

2 . Given a tactical scenario, an obstacle plan, personnel, specified materials, engineer equipment and references, describe in writing the procedures to emplace explosive obstacles needed to fix, turn, block, or disrupt per concept of operation, commander's intent and in accordance with the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001g)

3 . Given a tactical scenario, an obstacle plan, personnel, engineer equipment, safeties, and references, describe in writing the procedures to properly recover obstacle(s) by returning emplaced area to natural state and accounting for safety of all personnel per concept of operation, commander's intent and in accordance with the MCWP 3-17.5 Combined Arms Obstacle Integration. (1371-CMOB-2001h)

4 . Given a tactical scenario, explosive obstacle data, applicable engineer forms and reports, protractor, ruler, and pencil, record explosive obstacle(s) data per MCRP 3-17B Engineer Forms and Reports. (1371-CMOB-2001i)

NOTE(S): Examination on emplacement, marking, and recording of explosive devices/obstacles, and characteristics of minefields. Foriegn mine/explosive obstacle characteristics will also be tested.

ORM Statement: No hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Obstacle Integration	MCWP 3-17.5	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D01XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: EXPLOSIVE OBSTACLE WARFARE WRITTEN EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Operational Terms and Graphics	MCRP 5-12A	
Rear Area Operations	MCWP 3-41.1	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D02 **HOURS:** 16.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE BREACHING

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 2		
IL	4.00	30 : 1		
PA	11.50	30 : 6		

MEDIA: 782 GEAR, CPU, DB, FLAK, HELMET, MAPS, PPT, SH, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given a mission specifying available supporting arms, personnel with full combat load per T/O weapon, demolitions tools, engineer equipment, and Class V, conduct obstacle breaching operations to reduce linear obstacles or breach a lane through a minefield/explosive hazard in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012)

Downgrade Justification: Task event calls for reduction of explosive obstacles which is impractical for MCES to replicate at this time. MCES will cover all facets of breaching fundamentals, techniques, tactics, and procedures by using scenario driven exercises and use of sandtable for requirements. Students will be required to perform a simulated covert breach exercise in a field environment without use of Class V. Explosive obstacle breaching assets for NCO's are covered in other task events (1371-MOBL-2010, 1371-MOBL-2011).

ENABLING LEARNING OBJECTIVE(S):

1 . Given a tactical scenario, a description of an obstacle or a complex obstacle, a list available resources (personnel, equipment, materials) and references, as a member of a team, develop an obstacle breaching plan in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012a)

2 . Given a list of obstacles and a list of breaching equipment, select the equipment to effectively breach each obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012b)

3 . Given a tactical scenario, a description of an obstacle or a complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, described tactical formation(s) needed enroute to the obstacle to effectively breach or bypass an obstacle in accordance with MCWP 3-17.8 Combined Arms Mobility Operations. (1371-MOBL-2012c)

4 . Given a tactical scenario, a notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, described the conduct of final preparations to effectively breach an obstacle in accordance with MCWP 3-17.8 Combined Arms Mobility Operations. (1371-MOBL-2012d)

5 . Given a tactical scenario, a notional complex obstacle, a sandtable, a list available resources (personnel,

LESSON ID: C-23D02 **HOURS:** 16.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE BREACHING

equipment, materials) and references, as a member of a team, describe the conduct of movement to the obstacle from final preparation area to effectively breach an obstacle in accordance with MCWP 3-17.8 Combined Arms Mobility Operations. (1371-MOBL-2012e)

6 . Given a tactical scenario, a notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe employment of breaching assets to effectively breach an obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012f)

7 . Given a tactical scenario, a notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe securing the breached lane to identify left/right and near/far boundaries of the breached obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012g)

8 . Given a tactical scenario, a breached notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe the proofing of the breached lane to clear unexploded ordnance or obstacles that would impede mobility of the maneuver element in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012h)

9 . Given a tactical scenario, a breached notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe marking of the proofed lane to show start, lateral limits and ending of an obstacle for mobility of the maneuver element in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012i)

10 . Given a tactical scenario, a breached notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe the controlled movement of maneuver elements through the breached obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012j)

11 . Given a tactical scenario, a breached notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe the conduct of consolidation/resupply after breaching an obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012k)

SUMMARY OF AMMUNITION REQUIREMENT(S):

			EXPENDED		UNIT
DODIC	NOMENCLATURE	LO	UNITS PER STUDENT	UNITS FOR SUPPORT	OF ISSUE
G982.	Grenade, Hand Smoke TA M83	1371-MOBL-2012	0.000	4.000	EA
		DODIC TOTALS:	0.000	4.000	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D02 **HOURS:** 16.50
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE BREACHING

L312	Sig, Illum Ground White Star Parachute M127A1	1371-MOBL-2012	0.000	4.000	EA
		DODIC TOTALS:	0.000	4.000	
L495	Flare, Surface Trip M49 Series	1371-MOBL-2012	0.000	6.000	EA
		DODIC TOTALS:	0.000	6.000	
L598	Sim, Explosive Booby Trap Flash M117	1371-MOBL-2012	0.000	8.000	EA
		DODIC TOTALS:	0.000	8.000	

NOTE(S): This class will instruct the students in proper obstacle breach conduct and planning of minefields and other linear obstacles to support MAGTF operations. Students will be instructed on task organizations, support requirements and resources needed to assure mobility of the Operating Forces through explosive and non-explosive obstacles. 6.5 hours in practical application consists of sand table exercise(s) to allow the students conceptual walkthrough of breaching operations as a member of a team.

5 hours of practical application will be conducted at night for students to conduct a covert breach in teams.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
MAGTF Breaching Operations	MCWP 3-17.3	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D02XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE BREACHING WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	1.00	30 : 1		

MEDIA: HO, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Given a mission specifying available supporting arms, personnel with full combat load per T/O weapon, demolitions tools, engineer equipment, and Class V, conduct obstacle breaching operations to reduce linear obstacles or breach a lane through a minefield/explosive hazard in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012)

Downgrade Justification: Task event calls for reduction of explosive obstacles which is impractical for MCES to replicate at this time. MCES will cover all facets of breaching fundamentals, techniques, tactics, and procedures by using scenario driven exercises and use of sandtable for requirements. Students will be required to perform a simulated covert breach exercise in a field environment without use of Class V. Explosive obstacle breaching assets for NCO's are covered in other task events (1371-MOBL-2010, 1371-MOBL-2011).

ENABLING LEARNING OBJECTIVE(S):

1 . Given a tactical scenario, a description of an obstacle or a complex obstacle, a list available resources (personnel, equipment, materials) and references, as a member of a team, develop an obstacle breaching plan in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012a)

2 . Given a list of obstacles and a list of breaching equipment, select the equipment to effectively breach each obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012b)

3 . Given a tactical scenario, a description of an obstacle or a complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, described tactical formation(s) needed enroute to the obstacle to effectively breach or bypass an obstacle in accordance with MCWP 3-17.8 Combined Arms Mobility Operations. (1371-MOBL-2012c)

4 . Given a tactical scenario, a notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, described the conduct of final preparations to effectively breach an obstacle in accordance with MCWP 3-17.8 Combined Arms Mobility Operations. (1371-MOBL-2012d)

5 . Given a tactical scenario, a notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe the conduct of movement to the obstacle from final preparation area to effectively breach an obstacle in accordance with MCWP 3-17.8 Combined Arms Mobility Operations. (1371-MOBL-2012e)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D02XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: OBSTACLE BREACHING WRITTEN EXAM

6 . Given a tactical scenario, a notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe employment of breaching assets to effectively breach an obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012f)

7 . Given a tactical scenario, a notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe securing the breached lane to identify left/right and near/far boundaries of the breached obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012g)

8 . Given a tactical scenario, a breached notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe the proofing of the breached lane to clear unexploded ordnance or obstacles that would impede mobility of the maneuver element in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012h)

9 . Given a tactical scenario, a breached notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe marking of the proofed lane to show start, lateral limits and ending of an obstacle for mobility of the maneuver element in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012i)

10 . Given a tactical scenario, a breached notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe the controlled movement of maneuver elements through the breached obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012j)

11 . Given a tactical scenario, a breached notional complex obstacle, a sandtable, a list available resources (personnel, equipment, materials) and references, as a member of a team, describe the conduct of consolidation/resupply after breaching an obstacle in accordance with MCWP 3-17.3 MAGTF Breaching Operations. (1371-MOBL-2012k)

NOTE(S): This exam is scenario based and multiple choice written exam to test the student's knowledge in proper obstacle breach conduct and planning of breaching minefields and other obstacles to support MAGTF mobility operations. Coupled with C-23D03 and C-23D04(MCLIC and APOBS) students receive a holistic appreciation of obstacle breaching operations.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D02XW
TYPE: Exam
CATEGORY: Training
TITLE: OBSTACLE BREACHING WRITTEN EXAM

HOURS: 1.00
INITIAL RAC:
RESIDUAL RAC:

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
MAGTF Breaching Operations	MCWP 3-17.3	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D03 **HOURS:** 6.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: M58 LINE CHARGE EMPLOYMENT

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 1		
IL	1.00	30 : 1		
PA	4.00	30 : 3		

MEDIA: AIO, CPU, DB, FLAK, HELMET, PPT, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given an M58/M68 Linear Demolition Charge, MK 22 Rocket, MK 155 Trailer Mounted Launcher, towing vehicle, personal protective equipment, and an area to fire the charge, employ M58/M68 linear demolition charge to breach a lane through a minefield or other linear obstacles as directed to enable force mobility in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010)

ENABLING LEARNING OBJECTIVE(S):

1 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, training area, and reference, inspect the linear demolition charge in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010a)

2 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, training area, and as a member of a team, set up the linear demolition charge in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010b)

3 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, training area, and reference, perform pre-operational checks on the linear demolition charge in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010c)

4 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, and training area, position the linear demolition charge ensuring proper standoff distance for firing in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010d)

5 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, and training area, launch the rocket for the linear demolition charge in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010e)

6 . Given an inert linear demolition charge mounted on MK155 trailer and with rocket and charge deployed, detonate the charge (notional) in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010f)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D03 **HOURS:** 6.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: M58 LINE CHARGE EMPLOYMENT

7 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, and training area, perform immediate actions for the linear demolition misfire(s) in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010g)

SUMMARY OF AMMUNITION REQUIREMENT(S):

			EXPENDED		UNIT
DODIC	NOMENCLATURE	LO	UNITS PER STUDENT	UNITS FOR SUPPORT	OF ISSUE
J143	Rkt Motor, 5-inch MK22 Mod 4	1371-MOBL-2010	0.000	1.000	EA
		DODIC TOTALS:	0.000	1.000	
M914	Chg, Demo Inert Linear M68A2	1371-MOBL-2010	0.000	1.000	EA
		DODIC TOTALS:	0.000	1.000	

NOTE(S): This class will instruct the students in proper planning, maintenance, and employment of MICLIC systems to support MAGTF operations. Students will conduct a live fire exercise using inert M68 line charge tub.

ORM Statement: Initiial RAC=3, Residual RAC=4

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Mobility Operations	MCWP 3-17.8	
Explosive Hazards Operations	MCRP 3- 7.2D	
MAGTF Breaching Operations	MCWP 3-17.3	
Operator's Manual for MK 155 Mine Clearance System	TM 08982A-14&P/2B	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D03XP **HOURS:** 3.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: M58 LINE CHARGE EMPLOYMENT PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	3.00	30 : 3		

MEDIA: AIO, PEC, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Given an M58/M68 Linear Demolition Charge, MK 22 Rocket, MK 155 Trailer Mounted Launcher, towing vehicle, personal protective equipment, and an area to fire the charge, employ M58/M68 linear demolition charge to breach a lane through a minefield or other linear obstacles as directed to enable force mobility in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010)

ENABLING LEARNING OBJECTIVE(S):

1 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, training area, and reference, inspect the linear demolition charge in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010a)

2 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, training area, and as a member of a team, set up the linear demolition charge in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010b)

3 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, training area, and reference, perform pre-operational checks on the linear demolition charge in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010c)

4 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, and training area, position the linear demolition charge ensuring proper standoff distance for firing in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010d)

5 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, and training area, launch the rocket for the linear demolition charge in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010e)

6 . Given an inert linear demolition charge mounted on MK155 trailer and with rocket and charge deployed, detonate the charge (notional) in accordance with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010f)

7 . Given an inert linear demolition charge, an MK22 rocket, MK 155 trailer mounted launcher, towing vehicle, and training area, perform immediate actions for the linear demolition misfire(s) in accordance

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D03XP **HOURS:** 3.00

TYPE: Exam **INITIAL RAC:**

CATEGORY: Training **RESIDUAL RAC:**

TITLE: M58 LINE CHARGE EMPLOYMENT PERFORMANCE EXAM

with TM 08982A-14&P/2B Operators Manual for MK 155 Mine Clearance System. (1371-MOBL-2010g)

NOTE(S): This performance based exam will test the students knowledge in set-up, maintenance, and employment of MICLIC systems. Students will conduct exam as individual and teams to master the performance based checklist.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Mobility Operations	MCWP 3-17.8	
Explosive Hazards Operations	MCRP 3- 7.2D	
MAGTF Breaching Operations	MCWP 3-17.3	
Operator's Manual for MK 155 Mine Clearance System	TM 08982A-14&P/2B	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D04 **HOURS:** 6.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: APOBS

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 1		
IL	1.00	30 : 1		
PA	3.50	30 : 3		
Q	0.50	30 : 1		

MEDIA: AIO, CPU, DB, FLAK, HELMET, HO, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given an anti-personnel minefield or wire obstacle, Antipersonnel Obstacle Breaching System (APOBS), demolition tools, equipment, and personal protective equipment, employ the APOBS to clear a lane through the obstacle while observing all safety precautions in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011)

ENABLING LEARNING OBJECTIVE(S):

1 . Without the aid of reference, describe the capabilities of APOBS per TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011a)

2 . Without the aid of reference, describe the components of APOBS per TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011b)

3 . Given an APOBS and without references, unpack the APOBS ensuring all components are present in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011c)

4 . Given an APOBS and without references, perform preventive maintenance checks and services on a APOBS in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011d)

5 . Given an APOBS and as a member of a team , demonstrate pre-deployment procedures in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011e)

6 . Given an APOBS and as a member of a team, demonstrate firing requirements in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011f)

7 . Given an APOBS and without reference, explain immediate action procedures for misfire(s) in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011g)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D04 **HOURS:** 6.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: APOBS

SUMMARY OF AMMUNITION REQUIREMENT(S):

DODIC	NOMENCLATURE	LO	EXPENDED UNITS PER STUDENT	EXPENDED UNITS FOR SUPPORT	UNIT OF ISSUE
MN79	Mine, Apers Obstacle Breaching System MK 7 Mod 1	1371-MOBL-2011	0.000	1.000	EA
		DODIC TOTALS:	0.000	1.000	
MN84	Demolition Kit, APOBS Inert	1371-MOBL-2011	0.000	0.000	EA
		DODIC TOTALS:	0.000	0.000	

NOTE(S): This class will instruct the students in proper planning, maintenance, and employment of Anti-personnel Obstacle Breaching System (APOBS) to support MAGTF operations. Student practical application will be used to demomonstrate proficiency on APOBS (or APOBS trainer).

Students will conduct a live fire exercise as a class shot.

ORM Statement: Initial RAC=1, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineering Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
MAGTF Breaching Operations	MCWP 3-17.3	
Operators Manual MK-7 MOD. 1 Anti-Personnel Obstacle Breaching System (APOBS)	TM 013750-13&P	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D04XP **HOURS:** 3.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: APOBS PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	3.00	30 : 3		

MEDIA: 782 GEAR, AIO, FLAK, HELMET, PEC, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given an anti-personnel minefield or wire obstacle, Antipersonnel Obstacle Breaching System (APOBS), demolition tools, equipment, and personal protective equipment, employ the APOBS to clear a lane through the obstacle while observing all safety precautions in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011)

ENABLING LEARNING OBJECTIVE(S):

1 . Without the aid of reference, describe the capabilities of APOBS per TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011a)

2 . Without the aid of reference, describe the components of APOBS per TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011b)

3 . Given an APOBS and without references, unpack the APOBS ensuring all components are present in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011c)

4 . Given an APOBS and without references, perform preventive maintenance checks and services on a APOBS in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011d)

5 . Given an APOBS and as a member of a team , demonstrate pre-deployment procedures in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011e)

6 . Given an APOBS and as a member of a team, demonstrate firing requirements in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011f)

7 . Given an APOBS and without reference, explain immediate action procedures for misfire(s) in accordance with TM 013750-13&P Operators Manual MK-7 MOD 1 Anti-Personnel Obstacle Breaching System (ABOBS). (1371-MOBL-2011g)

SUMMARY OF AMMUNITION REQUIREMENT(S):

EXPENDED UNIT

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX D - OBSTACLE BREACHING

LESSON ID: C-23D04XP **HOURS:** 3.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: APOBS PERFORMANCE EXAM

DODIC	NOMENCLATURE	LO	UNITS PER STUDENT	UNITS FOR SUPPORT	OF ISSUE
MN84	Demolition Kit, APOBS Inert	1371-MOBL-2011	0.000	0.000	EA
		DODIC TOTALS:	0.000	0.000	

NOTE(S): This performance based exam will test the students knowledge in set-up, inspection, maintenance, and employment of APOBS system. Students will conduct exam with use of an APOBS trainer to master the performance based checklist.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
MAGTF Breaching Operations	MCWP 3-17.3	
Operators Manual MK-7 MOD. 1 Anti-Personnel Obstacle Breaching System (APOBS)	TM 013750-13&P	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E01 **HOURS:** 9.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ADVANCED DEMOLITIONS

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.50	30 : 2		
IL	2.00	30 : 1		
PA	4.50	30 : 6		
X(RE)	1.00	30 : 1		

MEDIA: AIO, CPU, DB, PPT, SH, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1. Given a mission to destroy or disable a target, demolition tools and equipment, Class V material, protective field equipment and references, use specialized explosives to produce the desired effect on the target per mission requirements. (1371-DEMO-2002)
2. Provided a target, demolitions tools and equipment, Class V, improvised materials, and protective field equipment, engage targets with expedient demolitions to produce the desired effect on the target equivalent to the effect of a similar conventional explosive or demolition charge. (1371-DEMO-2001)

ENABLING LEARNING OBJECTIVE(S):

1. With the aid of references, explain the employment theory of each expedient demolition charge per the MCRP 3-17.2D Explosive Hazard Operations. (1371-DEMO-2001a)
2. As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an expedient shaped charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001b)
3. As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an expedient platter charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001c)
4. As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an expedient claymore charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001d)
5. As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with a grape shot directional charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001e)
6. As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an omni (360 degree) charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001f)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E01 **HOURS:** 9.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ADVANCED DEMOLITIONS

7 . Given a mission and references, explain in writing the procedure to engage a target with an expedient flame mine per the MCRP 3-17A Engineer Field Data. (1371-DEMO-2001g)

8 . As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an expedient bangalore torpedo in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001h)

9 . Without the aid of references, explain the employment theory of each specialized demolition charge per the SWO 60-AA-MMA-010 Demolition Materials. (1371-DEMO-2002a)

10 . As a member of a team, given a mission, a demolitions training area with targets, demolitions tools, explosives and references, determine engagement of targets with specialized explosives per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2002b)

11 . As a member of a team, given a mission, a demolitions training area with targets, demolitions tools, explosives and references, engage targets with specialized explosives per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2002c)

NOTE(S): This class will instruct the students in specialized and expedient demolition calculations, construction, placement and intitiating systems. Students will recieve hands-on training during practical application to properly construct charges from standard military demolitions, commercial type explosives (ammonium nitrate) and will utilize specialized demolitions (i.e., data sheet, flex linear, etc.).

ORM Statement: Initial RAC=1, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Demolition Card	GTA 05-10-033	
Demolition Materials	SWO 60-AA-MMA-010	
Engineer Field Data	MCRP 3-17A	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Military Explosives	TM 9-1300-214	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E01XP **HOURS:** 6.50
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ADVANCED DEMOLITIONS PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	6.50	30 : 6		

MEDIA: 782 GEAR, AIO, FLAK, HELMET, MU, PEC, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given a mission to destroy or disable a target, demolition tools and equipment, Class V material, protective field equipment and references, use specialized explosives to produce the desired effect on the target per mission requirements. (1371-DEMO-2002)

2 . Provided a target, demolitions tools and equipment, Class V, improvised materials, and protective field equipment, engage targets with expedient demolitions to produce the desired effect on the target equivalent to the effect of a similar conventional explosive or demolition charge. (1371-DEMO-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an expedient shaped charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001b)

2 . As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an expedient platter charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001c)

3 . As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an expedient claymore charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001d)

4 . As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with a grape shot directional charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001e)

5 . As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an omni (360 degree) charge in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001f)

6 . As a member of a team, given a mission, a demolitions training area with targets, demolition tools, explosives, improvised materials and references, engage a target with an expedient bangalore torpedo in accordance with MCRP 3-17A Engineer Field Data. (1371-DEMO-2001h)

7 . As a member of a team, given a mission, a demolitions training area with targets, demolitions tools, explosives and references, determine engagement of targets with specialized explosives per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2002b)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E01XP **HOURS:** 6.50
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ADVANCED DEMOLITIONS PERFORMANCE EXAM

8 . As a member of a team, given a mission, a demolitions training area with targets, demolitions tools, explosives and references, engage targets with specialized explosives per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2002c)

SUMMARY OF AMMUNITION REQUIREMENT(S):

			EXPENDED		UNIT
DODIC	NOMENCLATURE	LO	UNITS PER STUDENT	UNITS FOR SUPPORT	OF ISSUE
M131	Cap, Blasting Non-Electric M7	1371-DEMO-2001	1.000	0.000	EA
		DODIC TOTALS:	1.000	0.000	
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2001	33.330	0.000	EA
		DODIC TOTALS:	33.330	0.000	
M670	Fuse, Blasting Time M700	1371-DEMO-2001	10.000	0.000	EA
		DODIC TOTALS:	10.000	0.000	
M757	Chg, Assembly Demo M183 Comp C-4	1371-DEMO-2001	0.066	1.000	EA
		DODIC TOTALS:	0.066	1.000	
M982	Chg, Demo Sheet 0.161 Inch Thick	1371-DEMO-2002	0.500	0.000	EA
		DODIC TOTALS:	0.500	0.000	
MM30	Chg, Flex 20 Gram PETN MK140 Mod 0	1371-DEMO-2002	0.500	0.000	EA
		DODIC TOTALS:	0.500	0.000	
MM44	Chg, Demo Flex Linear Shaped 75 Grains per ft	1371-DEMO-2002	0.068	0.000	EA
		DODIC TOTALS:	0.068	0.000	
MM46	Chg, Demo Flex Linear Shaped 225 Grains/Foot	1371-DEMO-2002	0.068	0.000	EA
		DODIC TOTALS:	0.068	0.000	
MM47	Chg, Demo Flex Linear Shaped 400 Grains/Foot	1371-DEMO-2002	0.068	0.000	EA
		DODIC TOTALS:	0.068	0.000	
MM48	Chg, Demo Flex Linear Shaped 600 Grains/Foot	1371-DEMO-2002	0.068	0.000	EA
		DODIC TOTALS:	0.068	0.000	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E01XP **HOURS:** 6.50
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ADVANCED DEMOLITIONS PERFORMANCE EXAM

MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2001	2.668	0.000	EA
		DODIC TOTALS:	2.668	0.000	

NOTE(S): This performance based examination will test the student's knowledge in specialized and expedient demolition construction, placement and intitiating systems. This exam will be in concert with practical application annotated in Concept Card C-23E01. Students will perform a live fire exercise and be graded based on performance checklist as individuals and as a team member.

ORM Statement: Initial RAC=1, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Demolition Card	GTA 05-10-033	
Demolition Materials	SWO 60-AA-MMA-010	
Engineer Field Data	MCRP 3-17A	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Military Explosives	TM 9-1300-214	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E01XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ADVANCED DEMOLITIONS WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	1.00	30 : 1		

MEDIA: HO

TERMINAL LEARNING OBJECTIVE(S):

1. Provided a target, demolitions tools and equipment, Class V, improvised materials, and protective field equipment, engage targets with expedient demolitions to produce the desired effect on the target equivalent to the effect of a similar conventional explosive or demolition charge. (1371-DEMO-2001)
2. Given a mission to destroy or disable a target, demolition tools and equipment, Class V material, protective field equipment and references, use specialized explosives to produce the desired effect on the target per mission requirements. (1371-DEMO-2002)

ENABLING LEARNING OBJECTIVE(S):

1. With the aid of references, explain the employment theory of each expedient demolition charge per the MCRP 3-17.2D Explosive Hazard Operations. (1371-DEMO-2001a)
2. Given a mission and references, explain in writing the procedure to engage a target with an expedient flame mine per the MCRP 3-17A Engineer Field Data. (1371-DEMO-2001g)
3. Without the aid of references, explain the employment theory of each specialized demolition charge per the SWO 60-AA-MMA-010 Demolition Materials. (1371-DEMO-2002a)

NOTE(S): This knowledge based written exam will test the students knowledge in specialized and expedient demolition calculations, construction, placement and intitiating systems. Students will receive multiple choice and scenario based questions to receive a grade.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Demolition Card	GTA 05-10-033	
Demolition Materials	SWO 60-AA-MMA-010	
Engineer Field Data	MCRP 3-17A	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Military Explosives	TM 9-1300-214	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E02 **HOURS:** 7.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: BRIDGE DEMOLITIONS

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
IL	5.00	30 : 1		
PA	2.00	30 : 3		

MEDIA: CAL, CPU, DB, MU, PPT, SH, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a mission, a bridge reconnaissance report, personnel, Class V, a demolition kit, protective field equipment and references, destroy bridges using explosives to ensure that the demolition results in either a gap that exceeds the enemy's assault bridging capability by 5 meters, or that leaves demolished components which are unable to provide sufficient bearing capacity for enemy assault breaching assets. (1371-CMOB-2004)

Downgrade Justification: Impractical/impossible to replicate the T&R task behavior (Destroy Bridges Using Explosives) in the training environment. CENCO students already possess significant knowledge on attacking different types of targets with explosives. This class focuses on mastery of the demolition calculations required and location of charges to disable or drop a bridge, dependent upon tactical situation.

ENABLING LEARNING OBJECTIVE(S):

1 . Given a mission, bridge data and references, calculate the amount of explosives required to destroy a bridge abutment in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004a)

2 . Given a mission, bridge data and references, calculate the amount of explosives required to destroy an intermediate support in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004b)

3 . Given a mission, bridge data and references, calculate the amount of explosives required to destroy a bridge span in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004c)

4 . Given a mission, bridge data and references, determine an initiating system required to destroy a bridge span, intermediate support or abutment in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004d)

5 . Given a mission, bridge data and references, determine placement of explosives required to destroy a bridge span, intermediate support or abutment in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004e)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E02 **HOURS:** 7.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: BRIDGE DEMOLITIONS

NOTE(S): This class will instruct the students in proper bridge demolition calculations, placement and intitiating systems to block or disrupt enemy movement. T&R task 1371-CMOB-2004 will be taught to standard by reconnoitering a nonstandard bridge; determining types/quantities of explosives; proper placement of explosives. Students will learn how to properly destroy abutments, intermediate supports, and span(s) to support mission requirements in support of MAGTF.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Demolition Card	GTA 05-10-033	
Engineer Field Data	MCRP 3-17A	
Explosives and Demolitions	MCRP 3-17.7L	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E02XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: BRIDGE DEMOLITIONS WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	2.00	30 : 1		

MEDIA: CAL, HO, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a mission, a bridge reconnaissance report, personnel, Class V, a demolition kit, protective field equipment and references, destroy bridges using explosives to ensure that the demolition results in either a gap that exceeds the enemy's assault bridging capability by 5 meters, or that leaves demolished components which are unable to provide sufficient bearing capacity for enemy assault breaching assets. (1371-CMOB-2004)

Downgrade Justification: Impractical/impossible to replicate the T&R task behavior (Destroy Bridges Using Explosives) in the training environment. CENCO students already possess significant knowledge on attacking different types of targets with explosives. This class focuses on mastery of the demolition calculations required and location of charges to disable or drop a bridge, dependent upon tactical situation.

ENABLING LEARNING OBJECTIVE(S):

1 . Given a mission, bridge data and references, calculate the amount of explosives required to destroy a bridge abutment in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004a)

2 . Given a mission, bridge data and references, calculate the amount of explosives required to destroy an intermediate support in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004b)

3 . Given a mission, bridge data and references, calculate the amount of explosives required to destroy a bridge span in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004c)

4 . Given a mission, bridge data and references, determine an initiating system required to destroy a bridge span, intermediate support or abutment in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004d)

5 . Given a mission, bridge data and references, determine placement of explosives required to destroy a bridge span, intermediate support or abutment in accordance with MCRP 3-17.7L Explosive and Demolitions and MCRP 3-17A Engineer Field Data. (1371-CMOB-2004e)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E02XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: BRIDGE DEMOLITIONS WRITTEN EXAM

NOTE(S): This knowledge based written exam will test the students in proper bridge demolition calculations, placement and intitiating systems.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Demolition Card	GTA 05-10-033	
Engineer Field Data	MCRP 3-17A	
Explosives and Demolitions	MCRP 3-17.7L	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E03 **HOURS:** 7.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: DEMOLITION RECONNAISSANCE

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
IL	2.00	30 : 1		
PA	5.00	30 : 3		

MEDIA: AIO, CAL, CPU, DB, MU, PPT, SH, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a mission to conduct a reconnaissance of a target designated for demolition, map of area, compass, measuring tape, appropriate form(s), and references, conduct demolition reconnaissance to complete all blocks of the appropriate form(s) to determine quantity of explosives required to produce the desired effect on the target(s); determine the time, labor, and logistics necessary to accomplish the mission; and capture a sketch of the proposed target(s) in accordance with the MCRP 3-17.7L Explosives and Demolitions. (1371-RECN-2002)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a mission to conduct demolition target reconnaissance, a map, a compass, and references, conduct map reconnaissance to the objective in accordance with MCWP 3-17.4 Engineer Reconnaissance. (1371-RECN-2002a)

2 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, reconnoiter to assigned objective within the specified time in accordance with mission guidance, MCWP 3-17.4 Engineer Reconnaissance and MCRP 3-17.7L Explosives and Demolitions. (1371-RECN-2002b)

3 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, estimate explosives and logistics required in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-RECN-2002c)

4 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, estimate personnel and time required to complete mission on appropriate form(s) in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-RECN-2002d)

5 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, sketch side views of target and cross sections of members to be cut, performing demolition reconnaissance within the specified time on appropriate form(s) in accordance with MCRP 3-17.7L Explosives and Demolitions and MCRP 3-17B Engineer Forms and Reports. (1371-RECN-2002e)

6 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, sketch a plan of the firing circuits and firing points within the specified time on appropriate form(s) in accordance with MCRP 3-17.7L Explosives and Demolitions and MCRP 3-17B

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E03 **HOURS:** 7.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: DEMOLITION RECONNAISSANCE

Engineer Forms and Reports. (1371-RECN-2002f)

7 . Given a mission, completed form(s), and references, submit required reconnaissance report form(s) depicting the demolition reconnaissance performed within the specified time on appropriate form(s) in accordance with MCRP 3-17.7L Explosives and Demolitions and MCRP 3-17B Engineer Forms and Reports. (1371-RECN-2002g)

NOTE(S): This class will instruct the students on proper planning, task organization, conduct and data collection/calculations to recon specified targets in support of the MAGTF.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Demolition Card	GTA 05-10-033	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Reconnaissance	MCWP 3-17.4	
Engineering Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Obstacle Folder	STANAG 2123	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E03XP **HOURS:** 3.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: DEMOLITION RECONNAISSANCE PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	3.00	30 : 3		

MEDIA: AIO, CAL, MAPS, MU, PEC, SH, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Provided a mission to conduct a reconnaissance of a target designated for demolition, map of area, compass, measuring tape, appropriate form(s), and references, conduct demolition reconnaissance to complete all blocks of the appropriate form(s) to determine quantity of explosives required to produce the desired effect on the target(s); determine the time, labor, and logistics necessary to accomplish the mission; and capture a sketch of the proposed target(s) in accordance with the MCRP 3-17.7L Explosives and Demolitions. (1371-RECN-2002)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a mission to conduct demolition target reconnaissance, a map, a compass, and references, conduct map reconnaissance to the objective in accordance with MCWP 3-17.4 Engineer Reconnaissance. (1371-RECN-2002a)

2 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, reconnoiter to assigned objective within the specified time in accordance with mission guidance, MCWP 3-17.4 Engineer Reconnaissance and MCRP 3-17.7L Explosives and Demolitions. (1371-RECN-2002b)

3 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, estimate explosives and logistics required in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-RECN-2002c)

4 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, estimate personnel and time required to complete mission on appropriate form(s) in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-RECN-2002d)

5 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, sketch side views of target and cross sections of members to be cut, performing demolition reconnaissance within the specified time on appropriate form(s) in accordance with MCRP 3-17.7L Explosives and Demolitions and MCRP 3-17B Engineer Forms and Reports. (1371-RECN-2002e)

6 . Given a mission, a map, a compass, a tape measure, digital camera, appropriate form(s), references, and as a member of a team, sketch a plan of the firing circuits and firing points within the specified time on appropriate form(s) in accordance with MCRP 3-17.7L Explosives and Demolitions and MCRP 3-17B Engineer Forms and Reports. (1371-RECN-2002f)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX E - ADVANCED DEMOLITIONS

LESSON ID: C-23E03XP **HOURS:** 3.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: DEMOLITION RECONNAISSANCE PERFORMANCE EXAM

7 . Given a mission, completed form(s), and references, submit required reconnaissance report form(s) depicting the demolition reconnaissance performed within the specified time on appropriate form(s) in accordance with MCRP 3-17.7L Explosives and Demolitions and MCRP 3-17B Engineer Forms and Reports. (1371-RECN-2002g)

NOTE(S): This exam will test (performance based) the students on the proper planning, task organization, conduct and data collection/calculations for reconnaissance missions on a specified target. Students will recieve a simulated operation order to conduct a reconnaissance mission to obtain critical information for a target folder and to destroy a specified target. Questons will also be asked of the students for specific items needed for a target folder per performance checklist.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Demolition Card	GTA 05-10-033	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Reconnaissance	MCWP 3-17.4	
Engineering Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Obstacle Folder	STANAG 2123	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01 **HOURS:** 55.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	10.00	30 : 3		
IL	17.00	30 : 1		
PA	28.00	30 : 6		

MEDIA: 782 GEAR, AIO, CAL, CPU, DB, FLAK, HELMET, MU, PPT, SH, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given Class V, breaching tools, non-explosive materials, a target to attack, and protective field equipment, employ a fence charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2014)

2 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a concrete charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2013)

3 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a detonating cord linear charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2012)

4 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a Uli knot slider charge to execute a successful breach in accordance with MCRP 3-17-7L Explosives and Demolitions. (1371-DEMO-2011)

5 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ an oval charge to execute a successful breach in accordance with MCRP 3-17-7L Explosives and Demolitions. (1371-DEMO-2010)

6 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a water charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2009)

7 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a window charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2008)

8 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a doughnut charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007)

9 . Given a targeted structure, and references, identify building construction to determine an appropriate breaching technique in accordance with NSWC/DL TR-3714 Urban Building Characteristics. (1371-DEMO-2006)

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01 **HOURS:** 55.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING

10 . Given an explosive charge, a designated target, assorted tools, and personal protective equipment (PPE), take appropriate protective measures to ensure personnel safety during detonation based on target type, location, and the explosive charge employed in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005)

11 . Given an explosive charge, a charge logbook, a calculator and references, compute the Net Explosive Weight (NEW) to determine safe blast and fragmentation distances for an explosive charge in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004)

12 . Given a breaching mission, and breacher's logbook, maintain a Breacher's Logbook to compile useful data as a reference for follow on breaching missions making all required entries and verifying the logbook accuracy. (1371-DEMO-2003)

13 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment (PPE), and a door in frame with lockset, conduct ballistic breach to defeat the target in accordance with FM 3-06.11 Combined Arms Operations in Urban Terrain. (1371-MOBL-2016)

14 . Given a shotgun, personal protective equipment (PPE), targets and ammunition, perform select shot drills with the shotgun without allowing the shotgun to cycle out of ammunition. (1371-MOBL-2014)

15 . Given a shotgun, personal protective equipment, targets, and ammunition, while employing combat marksmanship techniques, engage stationary targets with the shotgun to assess ammunition effects on paper targets from 15 yards. (1371-MOBL-2013)

16 . Given a designated target, breaching tools, and personal protective equipment (PPE), perform manual breaching to execute a successful breach utilizing the appropriate mechanical method in accordance with MCWP 3-35.3 Military Operations on Urbanized Terrain (MOUT). (1371-MOBL-2019)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a breaching mission and references, compile all necessary information to complete entries into Breacher's Charge Logbook per the MCRP 3-17.7L Explosives and Demolitions and per the Volume I-Guidebook for Assault Entry Techniques. (1371-DEMO-2003a)

2 . Given a breaching mission and references, complete the necessary data and drawings needed to breach a target into Breacher's Charge Logbook per the MCRP 3-17.7L Explosives and Demolitions and per the Volume I-Guidebook for Assault Entry Techniques. (1371-DEMO-2003b)

3 . Given a breaching mission and references, report the successful breach/modifications information into Breacher's Charge Logbook for future use per the MCRP 3-17.7L Explosives and Demolitions and per the Volume I-Guidebook for Assault Entry Techniques. (1371-DEMO-2003c)

4 . Without the aid of references, define Net Explosive Weight (NEW) verbatim per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004a)

5 . Given a type of explosive and references, determine the weight of the explosive in grains per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004b)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01 **HOURS:** 55.00

TYPE: Task Oriented **INITIAL RAC:**

CATEGORY: Training **RESIDUAL RAC:**

TITLE: URBAN MOBILITY BREACHING

6 . Given an explosive charge, with the aid of references, compute the Net Explosive Weight (NEW) per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004c)

7 . Given a mission, target, explosives, any other necessary materials, computed Net Explosive Weight (NEW) and references, determine safe stand-off distance to ensure safety of all personnel per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004d)

8 . Given a mission, target, explosives, any other necessary materials, computed Net Explosive Weight (NEW) and references, determine safe fragmentation distance to ensure safety of all personnel per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004e)

9 . Given a target, an explosive charge and references, identify the possible effects of detonation on the target and surrounding area per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005a)

10 . Given a target, an explosive charge and references, identify the possible effects of detonation on the breach team per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005b)

11 . Given a tactical scenario, select (from a list) appropriate personal protective equipment (PPE) to minimize risk of injury to the breach team per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005c)

12 . Given a multi-story target in a specified country, identify in writing the construction characteristics for each level which will allow for identification of appropriate breaching methods to ensure 100% penetration of the target and continuation of the mission per the NSWC/DL TR-3714 Urban Building Characteristics. (1371-DEMO-2006a)

13 . Given a specified region of the world, identify in writing standardized construction characteristics which will allow for identification of appropriate breaching methods for inclusion in crisis planning or pre-operation SOPs, and which will ensure 100% penetration of the target and continuation of the mission per the NSWC/DL TR-3714 Urban Building Characteristics. (1371-DEMO-2006b)

14 . Given a target in a specified country, identify in writing regional construction standards/codes to determine appropriate breaching methods to ensure 100% penetration of the target and continuation of the mission per the NSWC/DL TR-3714 Urban Building Characteristics. (1371-DEMO-2006c)

15 . Given a specified breaching charge and references, state the procedures to prime the charge using a det cord loop per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007a)

16 . Given a tactical scenario involving an urban breaching charge, a list of firing systems, and references, select the proper firing system per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007b)

17 . Given a tactical scenario involving an urban breach and references, explain the effects a specified breaching charge will have on a specific target per the references. (1371-DEMO-2007c)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01 **HOURS:** 55.00

TYPE: Task Oriented **INITIAL RAC:**

CATEGORY: Training **RESIDUAL RAC:**

TITLE: URBAN MOBILITY BREACHING

18 . Given a target for an urban breach, a list of materials and references, select necessary items required to construct the breaching charge per the references. (1371-DEMO-2007d)

19 . Given a tactical scenario involving an urban breach and references, state in writing the procedures for employing the breaching charge per the references. (1371-DEMO-2007e)

20 . Given a tactical scenario involving an urban breach, a specified breaching charge and references, select the optimal positioning for the breach team during detonation per the references. (1371-DEMO-2007f)

21 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a doughnut charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007g)

22 . Given an urban breaching mission, a breaching element, and the requirement, deliver a deliberate breacher's brief prior to leaving the line of departure, so that the breach element, the command element, and any other key personnel understand all facets of the breach. (1371-DEMO-2007h)

23 . Given an urban breaching mission, a breaching element, and the requirement, deliver a hasty breacher's brief in the last covered and concealed position, or while enroute to the target, so that the breach element understands all facets of the breach. (1371-DEMO-2007i)

24 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a window charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2008a)

25 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a water charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2009a)

26 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ an oval charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2010a)

27 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a Uli knot slider charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2011a)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01 **HOURS:** 55.00

TYPE: Task Oriented **INITIAL RAC:**

CATEGORY: Training **RESIDUAL RAC:**

TITLE: URBAN MOBILITY BREACHING

28 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a detonating cord linear charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2012a)

29 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a concrete charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2013a)

30 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a fence charge to conduct urban mobility breaching operations which result in creating a opening of the target for mobility while limiting the amount of collateral damage per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2014a)

31 . Given the requirement, state the characteristics of the shotgun per the TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013a)

32 . Given the requirement, identify the major components of the shotgun per the TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013b)

33 . Given the requirement, state the four weapon safety rules in accordance with MCRP 3-01A Rifle Marksmanship. (1371-MOBL-2013c)

34 . Given a shotgun, small arms maintenance equipment, approved cleaning solvents, and lubricants, field strip the shotgun in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013d)

35 . Given a shotgun, small arms maintenance equipment, approved cleaning solvents, and lubricants, clean the shotgun to keep the shotgun operational/serviceable in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013e)

36 . Given a cleaned, field stripped shotgun, reassemble the shotgun to operational status in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013f)

37 . Given a reassembled shotgun, perform a function check to ensure the shotgun is operational in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013g)

38 . Given a shotgun and the requirement, demonstrate the tactical carries with both strong and weak side in

LESSON ID: C-23F01 **HOURS:** 55.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING

accordance with MCRP 3-01A Rifle Marksmanship. (1371-MOBL-2013h)

39 . Given a shotgun, ammunition, and the requirement, load the shotgun in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013i)

40 . Given a shotgun, ammunition, and the requirement, cycle the shotgun in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013j)

41 . Given a shotgun, personal protective equipment (PPE), targets, and ammunition, while employing combat marksmanship techniques, engage stationary targets on command from 15 yards per the applicable references and Range SOP. (1371-MOBL-2013k)

42 . After engaging targets, having been given the cease fire and all clear commands and command to proceed down range, assess ammunition effects on the paper targets, noting the effects of the shotgun pattern per the applicable references and Range SOP. (1371-MOBL-2013l)

43 . Given a shotgun, ammunition, and the requirement, perform immediate action drills in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun and Range SOP. (1371-MOBL-2013m)

44 . Given a shotgun, ammunition, and the requirement, perform remedial action drills in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun and Range SOP. (1371-MOBL-2013n)

45 . Given a shotgun, personal protective equipment (PPE), targets and ammunition, engage targets with the magazine tube not fully filled without allowing the shotgun to cycle out of ammunition per the applicable references and Range SOP. (1371-MOBL-2014a)

46 . Given a shotgun, personal protective equipment (PPE), targets and ammunition, engage targets with the magazine tube fully filled without allowing the shotgun to cycle out of ammunition per the applicable references and Range SOP. (1371-MOBL-2014b)

47 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment, and a door in a frame with lockset, conduct a "strong" hand, locking point breach to defeat the target while limiting collateral damage in accordance with Guidebook for Assault Entry Techniques. (1371-MOBL-2016a)

48 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment, and a door in a frame with lockset, conduct a "weak" hand, locking point breach to defeat the target while limiting collateral damage in accordance with Guidebook for Assault Entry Techniques. (1371-MOBL-2016b)

49 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment, and

LESSON ID: C-23F01 **HOURS:** 55.00

TYPE: Task Oriented **INITIAL RAC:**

CATEGORY: Training **RESIDUAL RAC:**

TITLE: URBAN MOBILITY BREACHING

a door in a frame with lockset, conduct a "strong" hand, hinge breach to defeat the target while limiting collateral damage in accordance with Guidebook for Assault Entry Techniques. (1371-MOBL-2016c)

50 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment, and a door in a frame with lockset, conduct a "weak" hand, hinge breach to defeat the target while limiting collateral damage in accordance with Guidebook for Assault Entry Techniques. (1371-MOBL-2016d)

51 . Given a target, an Assault Breacher's Kit and any other necessary material, select a mechanical breaching tool resulting in 100% penetration of the target while limiting the amount of collateral damage and which allows entry in accordance with MCWP 3-35.3 Military Operations on Urbanized Terrain (MOUT) and Guidebook for Assault Entry Techniques Volume 1 and 2. (1371-MOBL-2019a)

52 . Given a target, an Assault Breacher's Kit and any other necessary material, employ a mechanical breaching tool, resulting in 100% penetration of the target while limiting the amount of collateral damage and which allows entry in accordance with MCWP 3-35.3 Military Operations on Urbanized Terrain (MOUT) and Guidebook for Assault Entry Techniques Volume 1 and 2. (1371-MOBL-2019b)

SUMMARY OF AMMUNITION REQUIREMENT(S):

			EXPENDED		UNIT
DODIC	NOMENCLATURE	LO	UNITS PER STUDENT	UNITS FOR SUPPORT	OF ISSUE
A011	Ctg, 12 GA #00 Buckshot M162 Sub f/AA60	1371-MOBL-2013	21.000	0.000	EA
		DODIC TOTALS:	21.000	0.000	
A023	Ctg, 12 GA 1 Ounce Slug Commercial	1371-MOBL-2016	12.000	0.000	EA
		DODIC TOTALS:	12.000	0.000	
AA54	Cartridge, 12 Gauge, Breaching, M1030	1371-DEMO-2003	18.000	0.000	EA
		DODIC TOTALS:	18.000	0.000	
AX14	Primer, Percussion 12 GA W209	1371-DEMO-2007	1.000	25.000	EA
		DODIC TOTALS:	1.000	25.000	
M023	Chg, Demo Block M112 1-1/4 pound C-4	1371-DEMO-2014	0.000	12.000	EA
M023	Chg, Demo Block M112 1-1/4 pound C-4	1371-DEMO-2013	0.000	12.000	EA
		DODIC TOTALS:	0.000	24.000	
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2011	3.800	0.000	EA

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01 **HOURS:** 55.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING

M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2014	0.500	34.000	EA
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2010	12.500	0.000	EA
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2013	2.200	0.000	EA
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2008	1.200	0.000	EA
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2007	6.900	0.000	EA
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2009	2.400	0.000	EA
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2012	5.000	0.000	EA
M456	Cord, Detonating PETN Type I Class E	1371-DEMO-2007g	0.700	3.000	EA
		DODIC TOTALS:	35.200	37.000	
ML03	Firing Device, Demo Multi-Purpose M142	1371-DEMO-2007	0.000	2.000	EA
		DODIC TOTALS:	0.000	2.000	
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2007	0.000	12.000	EA
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2009	0.000	18.000	EA
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2014	0.000	12.000	EA
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2008	0.000	18.000	EA
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2011	0.000	18.000	EA
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2010	0.000	18.000	EA
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2013	0.000	12.000	EA
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-DEMO-2012	0.000	18.000	EA
		DODIC TOTALS:	0.000	126.000	
MN14	Firing Device, Dual Mode MK54	1371-DEMO-2007	0.000	4.000	EA
		DODIC TOTALS:	0.000	4.000	
MN52	MK154 Mod 0	1371-DEMO-2011	0.000	9.000	EA
MN52	MK154 Mod 0	1371-DEMO-2009	0.000	9.000	EA
MN52	MK154 Mod 0	1371-DEMO-2010	0.000	9.000	EA
MN52	MK154 Mod 0	1371-DEMO-2012	0.000	9.000	EA
MN52	MK154 Mod 0	1371-DEMO-2007	0.000	6.000	EA

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01 **HOURS:** 55.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING

MN52	MK154 Mod 0	1371-DEMO-2014	0.000	6.000	EA
		DODIC TOTALS:	0.000	48.000	

NOTE(S): This class will instruct the students on proper urban breaching techniques (explosive, ballistic and mechanical) in support of the requirements for the MAGTF. Students are instructed on urban characteristics, personal protective equipment, safety, charge calculations, charge construction, charge placement, charge initiating systems, ballistic breaching (shotgun breaching), and other breaching assets utilized in the Operating Forces.

Learning Objective KSAs for 1371-DEMO-2007 are similar for TLOs 2008-2014. This note serves as ELOs for the above mentioned TLOs to alleviate adding identical ELOs to the concept card. Only specified task behavior ELOs for charge different from "doughnut charge" are annotated. Entered by Barry Autry, CEIC Training Specialist on 29 July 2013.

ORM Statement: Initial RAC= 1, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Reference Materials		
Appropriate Technical Manuals		
Characteristics of Urban Terrain	NSWC TR 79-224	
Demolition Materials	SWO60-AA-MMA-010	
Demolition Materials (Vol II)	SWO60-AA-MMA-020	
Explosive Standards	TM 9-1300-206	
Explosives and Demolitions	MCRP 3-17.7L	
Guidebook for Assault Entry Techniques Volume II	VOLUME II	
Guidebook for Assault Entry Techniques, Volume I	VOLUME I	
M590 Shotgun Owner's Manual	590 MILS	
Military Explosives	TM 9-1300-214	
Military Operations on Urbanized Terrain (MOUT)	MCWP 3-35.3	
Operator and Maintenance Manual, Model 500, Mossberg 12-gauge shotgun	TM 1003A/07172A/09081A-13P	
Rifle Marksmanship	MCRP 3-01A	
SHOTGUN M1200 WINCHESTER	TM 1005A-303-14	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01 **HOURS:** 55.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Urban Building Characteristics	NSWC/DL TR-3714	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	8.00	30 : 6		

MEDIA: 782 GEAR, AIO, FLAK, HELMET, MU, PEC, SH, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1. Given a designated target, breaching tools, and personal protective equipment (PPE), perform manual breaching to execute a successful breach utilizing the appropriate mechanical method in accordance with MCWP 3-35.3 Military Operations on Urbanized Terrain (MOUT). (1371-MOBL-2019)
2. Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a doughnut charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007)
3. Given an explosive charge, a designated target, assorted tools, and personal protective equipment (PPE), take appropriate protective measures to ensure personnel safety during detonation based on target type, location, and the explosive charge employed in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005)
4. Given an explosive charge, a charge logbook, a calculator and references, compute the Net Explosive Weight (NEW) to determine safe blast and fragmentation distances for an explosive charge in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004)
5. Given a breaching mission, and breacher's logbook, maintain a Breacher's Logbook to compile useful data as a reference for follow on breaching missions making all required entries and verifying the logbook accuracy. (1371-DEMO-2003)
6. Given Class V, breaching tools, non-explosive materials, a target to attack, and protective field equipment, employ a fence charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2014)
7. Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a concrete charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2013)
8. Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a detonating cord linear charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2012)
9. Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a Uli knot slider charge to execute a successful breach in accordance with MCRP 3-17-7L Explosives and Demolitions. (1371-DEMO-2011)
10. Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ an oval charge to execute a successful breach in accordance with MCRP 3-17-7L

LESSON ID: C-23F01XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING PERFORMANCE EXAM

Explosives and Demolitions. (1371-DEMO-2010)

11 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a water charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2009)

12 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a window charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2008)

13 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment (PPE), and a door in frame with lockset, conduct ballistic breach to defeat the target in accordance with FM 3-06.11 Combined Arms Operations in Urban Terrain. (1371-MOBL-2016)

14 . Given a shotgun, personal protective equipment (PPE), targets and ammunition, perform select shot drills with the shotgun without allowing the shotgun to cycle out of ammunition. (1371-MOBL-2014)

15 . Given a shotgun, personal protective equipment, targets, and ammunition, while employing combat marksmanship techniques, engage stationary targets with the shotgun to assess ammunition effects on paper targets from 15 yards. (1371-MOBL-2013)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a breaching mission and references, compile all necessary information to complete entries into Breacher's Charge Logbook per the MCRP 3-17.7L Explosives and Demolitions and per the Volume I-Guidebook for Assault Entry Techniques. (1371-DEMO-2003a)

2 . Given a breaching mission and references, complete the necessary data and drawings needed to breach a target into Breacher's Charge Logbook per the MCRP 3-17.7L Explosives and Demolitions and per the Volume I-Guidebook for Assault Entry Techniques. (1371-DEMO-2003b)

3 . Given a breaching mission and references, report the successful breach/modifications information into Breacher's Charge Logbook for future use per the MCRP 3-17.7L Explosives and Demolitions and per the Volume I-Guidebook for Assault Entry Techniques. (1371-DEMO-2003c)

4 . Given a mission, target, explosives, any other necessary materials, computed Net Explosive Weight (NEW) and references, determine safe stand-off distance to ensure safety of all personnel per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004d)

5 . Given a target, an explosive charge and references, identify the possible effects of detonation on the target and surrounding area per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005a)

6 . Given a target, an explosive charge and references, identify the possible effects of detonation on the breach team per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005b)

7 . Given a target for an urban breach, a list of materials and references, select necessary items required to construct the breaching charge per the references. (1371-DEMO-2007d)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING PERFORMANCE EXAM

8 . Given a tactical scenario involving an urban breach, a specified breaching charge and references, select the optimal positioning for the breach team during detonation per the references. (1371-DEMO-2007f)

9 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a doughnut charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007g)

10 . Given an urban breaching mission, a breaching element, and the requirement, deliver a deliberate breacher's brief prior to leaving the line of departure, so that the breach element, the command element, and any other key personnel understand all facets of the breach. (1371-DEMO-2007h)

11 . Given an urban breaching mission, a breaching element, and the requirement, deliver a hasty breacher's brief in the last covered and concealed position, or while enroute to the target, so that the breach element understands all facets of the breach. (1371-DEMO-2007i)

12 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a window charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2008a)

13 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a water charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2009a)

14 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ an oval charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2010a)

15 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a Uli knot slider charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2011a)

16 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a detonating cord linear charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2012a)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING PERFORMANCE EXAM

17 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a concrete charge to conduct urban mobility breaching operations which result in 100% penetration of the target while limiting the amount of collateral damage and which allows entry per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2013a)

18 . With the aid of references, as a member of a team, given all necessary tools and explosives, designated targets and personal protective equipment, employ a fence charge to conduct urban mobility breaching operations which result in creating a opening of the target for mobility while limiting the amount of collateral damage per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2014a)

19 . Given a shotgun, small arms maintenance equipment, approved cleaning solvents, and lubricants, field strip the shotgun in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013d)

20 . Given a shotgun, small arms maintenance equipment, approved cleaning solvents, and lubricants, clean the shotgun to keep the shotgun operational/serviceable in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013e)

21 . Given a cleaned, field stripped shotgun, reassemble the shotgun to operational status in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013f)

22 . Given a reassembled shotgun, perform a function check to ensure the shotgun is operational in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013g)

23 . Given a shotgun and the requirement, demonstrate the tactical carries with both strong and weak side in accordance with MCRP 3-01A Rifle Marksmanship. (1371-MOBL-2013h)

24 . Given a shotgun, ammunition, and the requirement, load the shotgun in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013i)

25 . Given a shotgun, ammunition, and the requirement, cycle the shotgun in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013j)

26 . Given a shotgun, personal protective equipment (PPE), targets, and ammunition, while employing combat marksmanship techniques, engage stationary targets on command from 15 yards per the applicable references and Range SOP. (1371-MOBL-2013k)

27 . After engaging targets, having been given the cease fire and all clear commands and command to proceed down range, assess ammunition effects on the paper targets, noting the effects of the shotgun

LESSON ID: C-23F01XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING PERFORMANCE EXAM

pattern per the applicable references and Range SOP. (1371-MOBL-2013l)

28 . Given a shotgun, ammunition, and the requirement, perform immediate action drills in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun and Range SOP. (1371-MOBL-2013m)

29 . Given a shotgun, ammunition, and the requirement, perform remedial action drills in accordance with TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun and Range SOP. (1371-MOBL-2013n)

30 . Given a shotgun, personal protective equipment (PPE), targets and ammunition, engage targets with the magazine tube not fully filled without allowing the shotgun to cycle out of ammunition per the applicable references and Range SOP. (1371-MOBL-2014a)

31 . Given a shotgun, personal protective equipment (PPE), targets and ammunition, engage targets with the magazine tube fully filled without allowing the shotgun to cycle out of ammunition per the applicable references and Range SOP. (1371-MOBL-2014b)

32 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment, and a door in a frame with lockset, conduct a "strong" hand, locking point breach to defeat the target while limiting collateral damage in accordance with Guidebook for Assault Entry Techniques. (1371-MOBL-2016a)

33 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment, and a door in a frame with lockset, conduct a "weak" hand, locking point breach to defeat the target while limiting collateral damage in accordance with Guidebook for Assault Entry Techniques. (1371-MOBL-2016b)

34 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment, and a door in a frame with lockset, conduct a "strong" hand, hinge breach to defeat the target while limiting collateral damage in accordance with Guidebook for Assault Entry Techniques. (1371-MOBL-2016c)

35 . Given a determined point of entry to breach, a shotgun, ammunition, personal protective equipment, and a door in a frame with lockset, conduct a "weak" hand, hinge breach to defeat the target while limiting collateral damage in accordance with Guidebook for Assault Entry Techniques. (1371-MOBL-2016d)

36 . Given a target, an Assault Breacher's Kit and any other necessary material, select a mechanical breaching tool resulting in 100% penetration of the target while limiting the amount of collateral damage and which allows entry in accordance with MCWP 3-35.3 Military Operations on Urbanized Terrain (MOUT) and Guidebook for Assault Entry Techniques Volume 1 and 2. (1371-MOBL-2019a)

37 . Given a target, an Assault Breacher's Kit and any other necessary material, employ a mechanical breaching tool, resulting in 100% penetration of the target while limiting the amount of collateral damage and which allows entry in accordance with MCWP 3-35.3 Military Operations on Urbanized

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING PERFORMANCE EXAM

Terrain (MOUT) and Guidebook for Assault Entry Techniques Volume 1 and 2. (1371-MOBL-2019b)

SUMMARY OF AMMUNITION REQUIREMENT(S):

DODIC	NOMENCLATURE	LO	EXPENDED UNITS PER STUDENT	EXPENDED UNITS FOR SUPPORT	UNIT OF ISSUE
AA54	Cartridge, 12 Gauge, Breaching, M1030	1371-MOBL-2016	6.000	0.000	EA
		DODIC TOTALS:	6.000	0.000	
AA55	Ctg, 12 GA Dummy MK242 Mod 0	1371-MOBL-2014	0.000	0.000	EA
		DODIC TOTALS:	0.000	0.000	

NOTE(S): This exam will test the students knowledge (performance based) on proper urban breaching techniques (explosive, ballistic and mechanical) in support of the requirements for the MAGTF.

Inert Class V (training aids) will be utilized for students to demonstrate mastery of shot building and priming of specified targets.

Class V (W) requirement for ballistic breaching will be utilized to demonstrate shotgun breaching proficiency.

Learning Objective KSAs for 1371-DEMO-2007 are similar for TLOs 2008-2014. This note serves as ELOs for the above mentioned TLOs to alleviate adding identical ELOs to the concept card. Only specified task behavior ELOs for charge different from "doughnut charge" are annotated. Entered by Barry Autry, CEIC Training Specialist on 29 July 2013.

ORM Statement: Initial RAC= 3, Residual RAC=4

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Reference Materials		
Appropriate Technical Manuals		
Combined Arms Operations in Urban Terrain	FM 3-06.11	
Demolition Materials	SWO 60-AA-MMA-010	
Demolition Materials (Vol II)	SWO60-AA-MMA-020	
Explosives and Demolitions	FM 3-34.214	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING PERFORMANCE EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Explosives and Demolitions	MCRP 3-17.7L	
Guidebook for Assault Entry Techniques Volume II	VOLUME II	
Guidebook for Assault Entry Techniques, Volume I	VOLUME I	
Military Explosives	TM 9-1300-214	
Military Operations on Urbanized Terrain (MOUT)	MCWP 3-35.3	
Operator and Maintenance Manual, Model 500, Mossberg 12-gauge shotgun	TM 1003A/07172A/09081A-13P	
Rifle Marksmanship	MCRP 3-10 A	
SHOTGUN M1200 WINCHESTER	TM 1005A-303-14	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	2.00	30 : 1		

MEDIA: AIO, CAL, HO

TERMINAL LEARNING OBJECTIVE(S):

1 . Given a shotgun, personal protective equipment, targets, and ammunition, while employing combat marksmanship techniques, engage stationary targets with the shotgun to assess ammunition effects on paper targets from 15 yards. (1371-MOBL-2013)

2 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a concrete charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2013)

3 . Given Class V, breaching tools, non-explosive materials, a target to attack, and protective field equipment, employ a fence charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2014)

4 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a detonating cord linear charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2012)

5 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a Uli knot slider charge to execute a successful breach in accordance with MCRP 3-17-7L Explosives and Demolitions. (1371-DEMO-2011)

6 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ an oval charge to execute a successful breach in accordance with MCRP 3-17-7L Explosives and Demolitions. (1371-DEMO-2010)

7 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a water charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2009)

8 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a window charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2008)

9 . Given Class V, breaching tools, non-explosive materials, a target to attack, and personal protective equipment (PPE), employ a doughnut charge to execute a successful breach in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007)

10 . Given a targeted structure, and references, identify building construction to determine an appropriate breaching technique in accordance with NSWC/DL TR-3714 Urban Building Characteristics. (1371-DEMO-2006)

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING WRITTEN EXAM

11 . Given an explosive charge, a designated target, assorted tools, and personal protective equipment (PPE), take appropriate protective measures to ensure personnel safety during detonation based on target type, location, and the explosive charge employed in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005)

12 . Given an explosive charge, a charge logbook, a calculator and references, compute the Net Explosive Weight (NEW) to determine safe blast and fragmentation distances for an explosive charge in accordance with MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004)

ENABLING LEARNING OBJECTIVE(S):

1 . Without the aid of references, define Net Explosive Weight (NEW) verbatim per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004a)

2 . Given a type of explosive and references, determine the weight of the explosive in grains per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004b)

3 . Given an explosive charge, with the aid of references, compute the Net Explosive Weight (NEW) per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004c)

4 . Given a mission, target, explosives, any other necessary materials, computed Net Explosive Weight (NEW) and references, determine safe fragmentation distance to ensure safety of all personnel per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2004e)

5 . Given a tactical scenario, select (from a list) appropriate personal protective equipment (PPE) to minimize risk of injury to the breach team per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2005c)

6 . Given a multi-story target in a specified country, identify in writing the construction characteristics for each level which will allow for identification of appropriate breaching methods to ensure 100% penetration of the target and continuation of the mission per the NSWC/DL TR-3714 Urban Building Characteristics. (1371-DEMO-2006a)

7 . Given a specified region of the world, identify in writing standardized construction characteristics which will allow for identification of appropriate breaching methods for inclusion in crisis planning or pre-operation SOPs, and which will ensure 100% penetration of the target and continuation of the mission per the NSWC/DL TR-3714 Urban Building Characteristics. (1371-DEMO-2006b)

8 . Given a target in a specified country, identify in writing regional construction standards/codes to determine appropriate breaching methods to ensure 100% penetration of the target and continuation of the mission per the NSWC/DL TR-3714 Urban Building Characteristics. (1371-DEMO-2006c)

9 . Given a specified breaching charge and references, state the procedures to prime the charge using a det cord loop per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007a)

10 . Given a tactical scenario involving an urban breaching charge, a list of firing systems, and references,

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING WRITTEN EXAM

select the proper firing system per the MCRP 3-17.7L Explosives and Demolitions. (1371-DEMO-2007b)

11 . Given a tactical scenario involving an urban breach and references, explain the effects a specified breaching charge will have on a specific target per the references. (1371-DEMO-2007c)

12 . Given a tactical scenario involving an urban breach and references, state in writing the procedures for employing the breaching charge per the references. (1371-DEMO-2007e)

13 . Given the requirement, state the characteristics of the shotgun per the TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013a)

14 . Given the requirement, identify the major components of the shotgun per the TM 1003A/07172A/09081A-13P Operator and Maintenance Manual, Model 500, Mossburg 12 Gauge Shotgun. (1371-MOBL-2013b)

15 . Given the requirement, state the four weapon safety rules in accordance with MCRP 3-01A Rifle Marksmanship. (1371-MOBL-2013c)

NOTE(S): This exam will test the students knowledge on proper urban breaching techniques (explosive, ballistic and mechanical) in support of the requirements for the MAGTF.

Learning Objective KSAs for 1371-DEMO-2007 are similar for TLOs 2008-2014. This note serves as ELOs for the above mentioned TLOs to alleviate adding identical ELOs to the concept card. Entered by Barry Autry, CEIC Training Specialist on 29 July 2013.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Reference Materials		
Appropriate Technical Manuals		
Characteristics of Urban Terrain	NSWC TR 79-224	
Combined Arms Operations in Urban Terrain	FM 3-06.11	
Demolition Materials	SWO 60-AA-MMA-010	
Demolition Materials (Vol II)	SWO60-AA-MMA-020	
Explosive Standards	TM 9-1300-206	
Explosives and Demolitions	MCRP 3-17.7L	
Guidebook for Assault Entry Techniques		
Guidebook for Assault Entry Techniques Volume II	VOLUME II	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX F - URBAN BREACHING

LESSON ID: C-23F01XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: URBAN MOBILITY BREACHING WRITTEN EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Guidebook for Assault Entry Techniques, Volume I	VOLUME I	
M590 Shotgun Owner's Manual	590 MILS	
Military Explosives	TM 9-1300-214	
Military Operations on Urbanized Terrain (MOUT)	MCWP 3-35.3	
Military Operations on Urbanized Terrain (MOUT)	MCWP 3-35.3	
Operator and Maintenance Manual, Model 500, Mossberg 12-gauge shotgun	TM 1003A/07172A/09081A-13P	
Rifle Marksmanship	MCRP 3-01A	
Rifle Marksmanship	MCRP 3-10 A	
SHOTGUN M1200 WINCHESTER	TM 1005A-303-14	
Urban Building Characteristics	NSWC/DL TR-3714	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G01 **HOURS:** 16.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC)

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	1.00	30 : 1		
IL	11.00	30 : 1		
PA	4.00	30 : 3		

MEDIA: 782 GEAR, AIO, CPU, DB, FLAK, HELMET, MAPS, PPT, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1. Given a tactical situation, a route to be swept, route sweeping equipment, a map, personnel, and a route sweep order, lead a dismounted route sweep to locate, mark, and/or reduce all explosive hazards/obstacles on the designated route in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018)
2. Given an operating environment, suspected explosive hazards, a combat engineer robot, personal protective equipment and references, operate a robot to perform remote operations without injury to personnel or damage to equipment, per the operator's manual. (1371-MOBL-2035)
3. Given a tactical situation, a route/area to be cleared, clearance equipment, a map, and an operation order, lead Route and Area Clearance Operations to locate, identify, mark, and/or reduce all explosive/non-explosive obstacles on the designate route/area. (1371-MOBL-2021)

ENABLING LEARNING OBJECTIVE(S):

1. Given a tactical situation and a dismounted route sweep mission, visually identify the probable location for explosive hazard threat emplacement per threat doctrine and MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018a)
2. Given a tactical situation and a dismounted route sweep mission, determine the sweep team task organization to meet mission requirements in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018b)
3. Given a tactical situation and a dismounted route sweep mission, determine specific equipment required for the task organized teams to meet mission requirements in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018c)
4. As a member of a team, given a tactical situation, a route sweep mission and all necessary tools, Class V and equipment, conduct dismounted route sweep operations to locate all explosive hazards (IEDs, mines, boobytraps, etc.), ensuring they are detected, marked, and/or reduced in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018d)
5. Without the aid of references, identify the phases of mounted route and area clearance operations per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021a)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G01 **HOURS:** 16.00

TYPE: Task Oriented **INITIAL RAC:**

CATEGORY: Training **RESIDUAL RAC:**

TITLE: ROUTE AND AREA CLEARANCE (RAAC)

6 . Without the aid of references, identify the mounted route and area clearance team roles and responsibilities per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021b)

7 . Without the aid of references, define the tenets of the IED-D framework per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021c)

8 . Without the aid of references, state the capabilities of the CAT III Mine-Protected Clearance Vehicle (MPCV) per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations and applicable technical manuals. (1371-MOBL-2021d)

9 . With the aid of references, identify the components of a Vehicle-Mounted Mine Detector (VMMD) set per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations and applicable technical manuals. (1371-MOBL-2021e)

10 . Given a route/area to be cleared and without references, determine the task organization of an engineer squad to conduct mounted route and area clearances in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021f)

11 . Given a route/area to be cleared and without references, determine specific equipment required for the task organized teams to conduct mounted route and area clearance in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021g)

12 . Given a robot and without references, state in writing the characteristics of a robot in accordance with applicable technical manuals. (1371-MOBL-2035a)

13 . Given a robot, a pre-operation checklist and references, conduct pre-operational checks and procedures in accordance with applicable technical manuals. (1371-MOBL-2035b)

14 . Given a robot, an operating environment consisting of different types of terrain and obstacles, and references, determine a robot's best avenue of approach to a hazard in accordance with applicable technical manuals. (1371-MOBL-2035c)

15 . Given a tactical scenario, robot, an operating environment consisting of different types of terrain and obstacles, and references, operate a robot in different environments and conditions in accordance with applicable technical manuals. (1371-MOBL-2035d)

16 . Given a tactical scenario, robot, an operating environment consisting of different types of terrain and obstacles, and references, perform immediate/remedial actions in order to restore robot to operable conditions in accordance with applicable technical manuals. (1371-MOBL-2035e)

17 . Given a tactical scenario, robot, an operating environment consisting of different types of terrain and obstacles, and references, conduct robotic reconnaissance on suspected objects in accordance with applicable technical manuals. (1371-MOBL-2035f)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G01 **HOURS:** 16.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC)

18 . Given a tactical scenario, robot, an operating environment consisting of different types of terrain and obstacles, and references, conduct recover robot to a safe area in accordance with applicable technical manuals. (1371-MOBL-2035g)

19 . Given a robot, cleaning material, post-operation checklist, and references, conduct post-operational checks and procedures in accordance with applicable technical manuals. (1371-MOBL-2035h)

20 . Given a tactical scenario, a route clearance order, Class V, engineer tools and equipment, and as a member of a team, conduct mounted route clearing operations to ensure sufficient mobility to support the concept of operations and the commander's intent in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations and applicable references. (1371-MOBL-2021i)

NOTE(S): Class introduces the student to route clearance assets (i.e. MRAPs, VMMD, robots, etc.) and techniques, tactics, and procedures for clearing an area or route either mounted or dismounted. Robot operation will be tested to performance standards during C-23G03 Reduce Explosive Hazards Performance Exam in accordance with performance checklist.

ORM Statement: Initial RAC=2, Residual RAC=4

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Equipment Manual		
Appropriate Manufacturer's Assembly Manual/Instructions		
Appropriate Technical Manuals		
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	
Engineer Reconnaissance	MCWP 3-17.4	
Engineering Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Improvised Explosive Device (IED) Defeat	FM 3-34.119	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G01 **HOURS:** 16.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC)

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
MAGTF Breaching Operations	MCWP 3-17.3	
Urban Operations	FM 3-06	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G01XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC) WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	2.00	30 : 1		

MEDIA: HO

TERMINAL LEARNING OBJECTIVE(S):

1. Given an operating environment, suspected explosive hazards, a combat engineer robot, personal protective equipment and references, operate a robot to perform remote operations without injury to personnel or damage to equipment, per the operator's manual. (1371-MOBL-2035)
2. Given a tactical situation, a route/area to be cleared, clearance equipment, a map, and an operation order, lead Route and Area Clearance Operations to locate, identify, mark, and/or reduce all explosive/non-explosive obstacles on the designate route/area. (1371-MOBL-2021)
3. Given a tactical situation, a route to be swept, route sweeping equipment, a map, personnel, and a route sweep order, lead a dismounted route sweep to locate, mark, and/or reduce all explosive hazards/obstacles on the designated route in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018)

ENABLING LEARNING OBJECTIVE(S):

1. Given a tactical situation and a dismounted route sweep mission, determine the sweep team task organization to meet mission requirements in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018b)
2. Given a tactical situation and a dismounted route sweep mission, determine specific equipment required for the task organized teams to meet mission requirements in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018c)
3. Without the aid of references, identify the phases of mounted route and area clearance operations per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021a)
4. Without the aid of references, identify the mounted route and area clearance team roles and responsibilities per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021b)
5. Without the aid of references, define the tenets of the IED-D framework per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021c)
6. Without the aid of references, state the capabilities of the CAT III Mine-Protected Clearance Vehicle (MPCV) per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations and applicable technical manuals. (1371-MOBL-2021d)
7. With the aid of references, identify the components of a Vehicle-Mounted Mine Detector (VMMD) set

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G01XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC) WRITTEN EXAM

per MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations and applicable technical manuals. (1371-MOBL-2021e)

8 . Given a route/area to be cleared and without references, determine the task organization of an engineer squad to conduct mounted route and area clearances in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021f)

9 . Given a route/area to be cleared and without references, determine specific equipment required for the task organized teams to conduct mounted route and area clearance in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021g)

10 . Given a robot and without references, state in writing the characteristics of a robot in accordance with applicable technical manuals. (1371-MOBL-2035a)

NOTE(S): Knowledge based testing on route clearance assets (i.e. MRAPs, VMMD, robots, detectors, etc.) and techniques, tactics, and procedures for clearing an area or route either mounted or dismounted.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Equipment Manual		
Appropriate Manufacturer's Assembly Manual/Instructions		
Appropriate Technical Manuals		
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	
Engineer Reconnaissance	MCWP 3-17.4	
Engineering Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
MAGTF Breaching Operations	MCWP 3-17.3	
Urban Operations	FM 3-06	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G02 **HOURS:** 63.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IDENTIFICATION OF EXPLOSIVE HAZARDS

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	4.00	30 : 2		
IL	23.00	30 : 1		
PA(I)	36.00	30 : 2		

MEDIA: AIO, CPU, DB, EC, MU, PPT, SH, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given an operating environment, suspected explosive hazards, combat engineer equipment, field protective equipment and publications/ORDATA II, identify Explosive Hazards (EH) by catagory, country of orgin, type of function, safeties and conditions. (1371-MOBL-2022)

2 . Given a tactical situation, a route/area to be cleared, clearance equipment, a map, and an operation order, lead Route and Area Clearance Operations to locate, identify, mark, and/or reduce all explosive/non-explosive obstacles on the designate route/area. (1371-MOBL-2021)

ENABLING LEARNING OBJECTIVE(S):

1 . Given a route/area to be cleared and without references, identify the probable location of explosive/non-explosive obstacles while conducting mounted route and area clearance operations in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021h)

2 . With aid of references, define the terminology/symbols of explosive hazards in accordance with applicable references. (1371-MOBL-2022a)

3 . Without aid of references, identify markers and indicators of explosive hazards in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2022b)

4 . Without aid of references, provided an Improvised Explosive Device (IED) course, identify IEDs in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2022c)

5 . Without aid of references, shown types of boobytraps, identify the characteristics and components of boobytraps in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2022d)

6 . Without aid of references, shown types of thrown munitions, identify the characteristics and components of thrown munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022e)

7 . Without aid of references, shown types of projected munitions, identify the characteristics and components of projected munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022f)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G02 **HOURS:** 63.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IDENTIFICATION OF EXPLOSIVE HAZARDS

8 . Without aid of references, shown types of dropped munitions, identify the characteristics and components of dropped munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022g)

9 . Without aid of references, shown types of placed munitions, identify the characteristics and components of placed munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022h)

10 . With aid of references, shown types of chemicals used in home made explosives (HME), identify components of HME in accordance with MCRP 3-17.2D Explosive Hazard Operations, MCIP 3-17.01 Combine Arms Improvised Explosive Device Defeat Operations and other applicable references. (1371-MOBL-2022i)

NOTE(S): Class consists of teaching fundamentals in identifying explosive hazards by origin, type, fuzing and main charge. Students will utilize existing software and country handbooks throughout the class.

4 hours of PA training will be utilized to allow students to identify EHs during limited visibility conditions at night with remote equipment.

Home Made Explosives (HME) recognition and characteristics/components will be covered extensively during lecture (11 hours) and practical application (3 hours) during this class.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Equipment Manual		
Appropriate Reference Materials		
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Country Handbooks	CHB	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G02 **HOURS:** 63.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IDENTIFICATION OF EXPLOSIVE HAZARDS

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
MAGTF Breaching Operations	MCWP 3-17.3	
ORDATA II (Software)	ORD	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G02XP **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IDENTIFICATION OF EXPLOSIVE HAZARDS PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	1.00	30 : 3		

MEDIA: AIO, MU, PEC, SH, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1. Given an operating environment, suspected explosive hazards, combat engineer equipment, field protective equipment and publications/ORDATA II, identify Explosive Hazards (EH) by catagory, country of orgin, type of function, safeties and conditions. (1371-MOBL-2022)
2. Given a tactical situation, a route/area to be cleared, clearance equipment, a map, and an operation order, lead Route and Area Clearance Operations to locate, identify, mark, and/or reduce all explosive/non-explosive obstacles on the designate route/area. (1371-MOBL-2021)

ENABLING LEARNING OBJECTIVE(S):

1. Given a route/area to be cleared and without references, identify the probable location of explosive/non-explosive obstacles while conducting mounted route and area clearance operations in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021h)
2. With aid of references, define the terminology/symbols of explosive hazards in accordance with applicable references. (1371-MOBL-2022a)
3. Without aid of references, identify markers and indicators of explosive hazards in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2022b)
4. Without aid of references, provided an Improvised Explosive Device (IED) course, identify IEDs in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2022c)
5. Without aid of references, shown types of boobytraps, identify the characteristics and components of boobytraps in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2022d)
6. Without aid of references, shown types of thrown munitions, identify the characteristics and components of thrown munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022e)
7. Without aid of references, shown types of projected munitions, identify the characteristics and components of projected munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022f)
8. Without aid of references, shown types of dropped munitions, identify the characteristics and components of dropped munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and

LESSON ID: C-23G02XP **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IDENTIFICATION OF EXPLOSIVE HAZARDS PERFORMANCE EXAM

other applicable references. (1371-MOBL-2022g)

9 . Without aid of references, shown types of placed munitions, identify the characteristics and components of placed munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022h)

10 . With aid of references, shown types of chemicals used in home made explosives (HME), identify components of HME in accordance with MCRP 3-17.2D Explosive Hazard Operations, MCIP 3-17.01 Combine Arms Improvised Explosive Device Defeat Operations and other applicable references. (1371-MOBL-2022i)

NOTE(S): Examination will consist of identifying explosive hazards. Students will be presented ordnance to properly identify in time limit given.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Equipment Manual		
Appropriate Reference Materials		
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Country Handbooks	CHB	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
MAGTF Breaching Operations	MCWP 3-17.3	
ORDATA II (Software)	ORD	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G02XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IDENTIFICATION OF EXPLOSIVE HAZARDS WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	1.00	30 : 1		

MEDIA: AIO, HO, SO

TERMINAL LEARNING OBJECTIVE(S):

1. Given an operating environment, suspected explosive hazards, combat engineer equipment, field protective equipment and publications/ORDATA II, identify Explosive Hazards (EH) by catagory, country of orgin, type of function, safeties and conditions. (1371-MOBL-2022)
2. Given a tactical situation, a route/area to be cleared, clearance equipment, a map, and an operation order, lead Route and Area Clearance Operations to locate, identify, mark, and/or reduce all explosive/non-explosive obstacles on the designate route/area. (1371-MOBL-2021)

ENABLING LEARNING OBJECTIVE(S):

1. Given a route/area to be cleared and without references, identify the probable location of explosive/non-explosive obstacles while conducting mounted route and area clearance operations in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2021h)
2. With aid of references, define the terminology/symbols of explosive hazards in accordance with applicable references. (1371-MOBL-2022a)
3. Without aid of references, identify markers and indicators of explosive hazards in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2022b)
4. Without aid of references, provided an Improvised Explosive Device (IED) course, identify IEDs in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2022c)
5. Without aid of references, shown types of boobytraps, identify the characteristics and components of boobytraps in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2022d)
6. Without aid of references, shown types of thrown munitions, identify the characteristics and components of thrown munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022e)
7. Without aid of references, shown types of projected munitions, identify the characteristics and components of projected munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022f)
8. Without aid of references, shown types of dropped munitions, identify the characteristics and components of dropped munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and

LESSON ID: C-23G02XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: IDENTIFICATION OF EXPLOSIVE HAZARDS WRITTEN EXAM

other applicable references. (1371-MOBL-2022g)

9 . Without aid of references, shown types of placed munitions, identify the characteristics and components of placed munitions in accordance with MCRP 3-17.2D Explosive Hazard Operations and other applicable references. (1371-MOBL-2022h)

10 . With aid of references, shown types of chemicals used in home made explosives (HME), identify components of HME in accordance with MCRP 3-17.2D Explosive Hazard Operations, MCIP 3-17.01 Combine Arms Improvised Explosive Device Defeat Operations and other applicable references. (1371-MOBL-2022i)

NOTE(S): Examination will consist of knowledge base questions in identifying explosive hazards precursors and ordnance to include home-made explosives (HME).

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Equipment Manual		
Appropriate Reference Materials		
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Country Handbooks	CHB	
Engineer Field Data	MCRP 3-17A	
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
MAGTF Breaching Operations	MCWP 3-17.3	
ORDATA II (Software)	ORD	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03 **HOURS:** 60.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
D	4.00	30 : 2		
IL	16.00	30 : 1		
PA	40.00	30 : 6		

MEDIA: 782 GEAR, AIO, CPU, DB, FLAK, HELMET, MU, PPT, SH, SMB, SO, TF

TERMINAL LEARNING OBJECTIVE(S):

1 . Given an operating environment, a positively identified explosive hazard, combat engineer equipment, Class V, personal protective equipment, commander's decision and references, reduce Explosive Hazards (EH) by calculating, placing and detonating an explosive charge that will result in the reduction of the explosive hazard and allow for assured mobility in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023)

ENABLING LEARNING OBJECTIVE(S):

1 . With aid of references, define the Leader¿s Decision Considerations matrix in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023a)

2 . Provided an Improvised Explosive Device trail, suspected explosive hazards (EH) and without references, execute the 5 C's once contact is made with an explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023b)

3 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, employ protective measures for suspected EH in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023c)

4 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, employ mitigation measures for suspected EH in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023d)

5 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, positively identify a suspected explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations, Country Handbook and ORDATA II publication/software. (1371-MOBL-2023e)

6 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, determine the required equipment for reduction of explosive hazards in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations.

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03 **HOURS:** 60.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS

(1371-MOBL-2023f)

7 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, determine what Class V is needed for reduction of an explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023g)

8 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, prepare a firing system for reduction charge in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023h)

9 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, construct a charge in order to reduce an explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023i)

10 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, follow the steps of preparing for detonation to reduce explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023j)

11 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, place a charge that will result in reducing the explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023k)

12 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, detonate the charge to achieve high order detonation to reduce explosive obstacle in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023l)

13 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, perform immediate action for misfires of explosive charges to reduce explosive obstacle in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023m)

14 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, and without references, confirm the results of the reduction of the explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023n)

15 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, and without references, retrieve remnants and components of destroyed munitions for

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03 **HOURS:** 60.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS

intelligence gathering in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023o)

16 . With aid of references and recorded data, report the required data of the explosive hazard (reduced or bypassed) in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023p)

SUMMARY OF AMMUNITION REQUIREMENT(S):

DODIC	NOMENCLATURE	LO	EXPENDED UNITS PER STUDENT	EXPENDED UNITS FOR SUPPORT	UNIT OF ISSUE
M023	Chg, Demo Block M112 1-1/4 pound C-4	1371-MOBL-2023	1.000	0.000	EA
		DODIC TOTALS:	1.000	0.000	
M131	Cap, Blasting Non-Electric M7	1371-MOBL-2023	0.000	13.000	EA
		DODIC TOTALS:	0.000	13.000	
M456	Cord, Detonating PETN Type I Class E	1371-MOBL-2023	10.000	0.000	EA
		DODIC TOTALS:	10.000	0.000	
M670	Fuse, Blasting Time M700	1371-MOBL-2023	1.660	0.000	EA
		DODIC TOTALS:	1.660	0.000	
M757	Chg, Assembly Demo M183 Comp C-4	1371-MOBL-2023	0.066	1.000	EA
		DODIC TOTALS:	0.066	1.000	
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-MOBL-2023	0.000	20.000	EA
		DODIC TOTALS:	0.000	20.000	
MN88	Cap, Blasting, 500 ft mini-tube M21	1371-MOBL-2023	0.000	1.000	EA
		DODIC TOTALS:	0.000	1.000	
MN90	Cap, Blasting, 1000 ft mini-tube M23	1371-MOBL-2023	0.000	10.000	EA
		DODIC TOTALS:	0.000	10.000	

NOTE(S): Students will be conducting explosive hazard reduction as a 5 man team for Captured Enemy Ammunition (CEA) reduction and 3 man teams for remote reduction. Base range regulations permit limited amount (pounds) of explosive untamped/tamped on approved ranges. Simulated ordnance (cast replicas) will be

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03 **HOURS:** 60.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS

utilized for training. Students will be given a refresher on robot operations for use in identifying and interrogating suspected EH.

6 hours during PA training will be utilized to train students reduction of EH during limited visibility conditions at night with inert ordnance.

ORM Statement: Initial RAC=1, Residual RAC=3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Technical Manuals		
Combined Arms Breaching Operations	FM 90-13-1	
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Combined Arms Operations in Urban Terrain	FM 3-06.11	
Engineer Field Data	MCRP 3-17A	
Engineer Operations	MCWP 3-17	
Engineer Reconnaissance	GTA 5-2-5	
Engineer Reconnaissance	MCWP 3-17.4	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Ground Combat Operations	MCWP 3-1	
MAGTF Breaching Operations	MCWP 3-17.3	
MAGTF Explosive Ordnance Disposal	MCWP 3-17.2	
Military Operations on Urbanized Terrain (MOUT)	MCWP 3-35.3	
Risk Management	FM 100-14	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	8.00	30 : 3		

MEDIA: 782 GEAR, AIO, FLAK, HELMET, MAPS, MU, PEC, TF

TERMINAL LEARNING OBJECTIVE(S):

1. Given an operating environment, suspected explosive hazards, a combat engineer robot, personal protective equipment and references, operate a robot to perform remote operations without injury to personnel or damage to equipment, per the operator's manual. (1371-MOBL-2035)
2. Given an operating environment, a positively identified explosive hazard, combat engineer equipment, Class V, personal protective equipment, commander's decision and references, reduce Explosive Hazards (EH) by calculating, placing and detonating an explosive charge that will result in the reduction of the explosive hazard and allow for assured mobility in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023)

ENABLING LEARNING OBJECTIVE(S):

1. Provided an Improvised Explosive Device trail, suspected explosive hazards (EH) and without references, execute the 5 C's once contact is made with an explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023b)
2. Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, employ protective measures for suspected EH in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023c)
3. Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, employ mitigation measures for suspected EH in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023d)
4. Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, positively identify a suspected explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations, Country Handbook and ORDATA II publication/software. (1371-MOBL-2023e)
5. Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, prepare a firing system for reduction charge in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023h)

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS PERFORMANCE EXAM

6 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, construct a charge in order to reduce an explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023i)

7 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, follow the steps of preparing for detonation to reduce explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023j)

8 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, place a charge that will result in reducing the explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023k)

9 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, detonate the charge to achieve high order detonation to reduce explosive obstacle in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023l)

10 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, perform immediate action for misfires of explosive charges to reduce explosive obstacle in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023m)

11 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, and without references, confirm the results of the reduction of the explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023n)

12 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, and without references, retrieve remnants and components of destroyed munitions for intelligence gathering in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023o)

13 . With aid of references and recorded data, report the required data of the explosive hazard (reduced or bypassed) in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023p)

14 . Given a robot, a pre-operation checklist and references, conduct pre-operational checks and procedures in accordance with applicable technical manuals. (1371-MOBL-2035b)

15 . Given a robot, an operating environment consisting of different types of terrain and obstacles, and

LESSON ID: C-23G03XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS PERFORMANCE EXAM

references, determine a robot's best avenue of approach to a hazard in accordance with applicable technical manuals. (1371-MOBL-2035c)

16 . Given a tactical scenario, robot, an operating environment consisting of different types of terrain and obstacles, and references, operate a robot in different environments and conditions in accordance with applicable technical manuals. (1371-MOBL-2035d)

17 . Given a tactical scenario, robot, an operating environment consisting of different types of terrain and obstacles, and references, perform immediate/remedial actions in order to restore robot to operable conditions in accordance with applicable technical manuals. (1371-MOBL-2035e)

18 . Given a tactical scenario, robot, an operating environment consisting of different types of terrain and obstacles, and references, conduct robotic reconnaissance on suspected objects in accordance with applicable technical manuals. (1371-MOBL-2035f)

19 . Given a tactical scenario, robot, an operating environment consisting of different types of terrain and obstacles, and references, conduct recover robot to a safe area in accordance with applicable technical manuals. (1371-MOBL-2035g)

20 . Given a robot, cleaning material, post-operation checklist, and references, conduct post-operational checks and procedures in accordance with applicable technical manuals. (1371-MOBL-2035h)

SUMMARY OF AMMUNITION REQUIREMENT(S):

			EXPENDED		UNIT
DODIC	NOMENCLATURE	LO	UNITS PER STUDENT	UNITS FOR SUPPORT	OF ISSUE
M468	CORD, DET TYPE-1 (INERT) 2 ROLLS	1371-MOBL-2023	0.000	2.000	EA
		DODIC TOTALS:	0.000	2.000	

NOTE(S): This exam (scenario based) includes task 1371-MOBL-2022 "Identification of Explosive Hazards", 1371-MOBL-2023 "Reduce Explosive Hazards" and 1371-MOBL-2035 "Operate a Robot". Students will be evaluated utilizing a performance checklist with inert Class V material for mastery of single and multiple item reduction.

ORM Statement: Intial RAC 4, Residual RAC 5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Manufacturer's Assembly Manual/Instructions		

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03XP **HOURS:** 8.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS PERFORMANCE EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Technical Manuals		
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	
Engineer Operations	MCWP 3-17	
Engineer Reconnaissance	MCWP 3-17.4	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Ground Combat Operations	MCWP 3-1	
MAGTF Breaching Operations	MCWP 3-17.3	
Military Operations on Urbanized Terrain (MOUT)	MCWP 3-35.3	
Risk Management	FM 100-14	
Risk Management - Cancelled w/o replacement	MCRP 5-12.1C	
Urban Operations	FM 3-06	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	2.00	30 : 1		

MEDIA: HO

TERMINAL LEARNING OBJECTIVE(S):

1 . Given an operating environment, a positively identified explosive hazard, combat engineer equipment, Class V, personal protective equipment, commander's decision and references, reduce Explosive Hazards (EH) by calculating, placing and detonating an explosive charge that will result in the reduction of the explosive hazard and allow for assured mobility in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023)

ENABLING LEARNING OBJECTIVE(S):

1 . With aid of references, define the Leader¿s Decision Considerations matrix in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023a)

2 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, determine the required equipment for reduction of explosive hazards in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023f)

3 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials and without references, determine what Class V is needed for reduction of an explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023g)

NOTE(S): Examination will include knowledge based testing on "Reduce Explosive Hazards" period of instruction.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Technical Manuals		
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	
Engineer Operations	MCWP 3-17	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX G - ROUTE AND AREA CLEARANCE

LESSON ID: C-23G03XW **HOURS:** 2.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: REDUCE EXPLOSIVE HAZARDS WRITTEN EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Reconnaissance	MCWP 3-17.4	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Ground Combat Operations	MCWP 3-1	
MAGTF Breaching Operations	MCWP 3-17.3	
Military Operations on Urbanized Terrain (MOUT)	MCWP 3-35.3	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX H - MAINTENANCE MANAGEMENT

LESSON ID: C-23H01 **HOURS:** 5.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ORGANIZATIONAL MAINTENANCE

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
IL	3.00	30 : 1		
PA	2.00	30 : 2		

MEDIA: CPU, DB, HO, PPT, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . With access to Global Combat Support System-Marine Corps (GCSSMC), combat engineer equipment, chests, sets and kits, equipment records, maintenance forms and references, maintain the unit's engineer equipment, chests, sets and kits maintenance programs to ensure maintenance management functions, maintenance resources, production, and information conform to unit MMSOP requirements per the references. (1371-MANT-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . Given the requirement, state the purpose of maintenance/maintenance management in accordance with MCO P4790.2_ MIMMS Field Procedure Manual and other applicable references. (1371-MANT-2001a)

2 . Given the requirement and references, state the requirements to maintain publications for unit equipment, sets, chests and kits in accordance with MCO P4790.1_. (1371-MANT-2001b)

3 . Given the requirement, a notional Table of Equipment (T/E), and references, state procedures to inventory items, equipment sets, chests and kits that are annotated on the Consolidate Memorandum Receipt (CMR) in accordance with applicable references. (1371-MANT-2001c)

4 . Given the requirement, a notional Table of Equipment (T/E), a Consolidate Memorandum Receipt (CMR), and references, state procedures to report discrepancies (unserviceable, missing, excessive items, etc.) in accordance with applicable references. (1371-MANT-2001d)

5 . Given the requirement, state the purpose of Global Combat Support System-Marine Corps (GCSS-MC) that highlights the benefits and capabilities in accordance with applicable references. (1371-MANT-2001e)

6 . Given the requirement, a notional Table of Equipment (T/E), applicable forms or reports, and references, state requirements to maintain equipment folders/forms/GCSS-MC to ensure proper dispatching procedures are being enforced, that preventive and corrective maintenance are being performed as required, and that equipment usage/logs are properly maintained and inputted into GCSS-MC data base(s) in accordance with applicable references. (1371-MANT-2001f)

7 . Given the requirement, state the different service requests in GCSS-MC by describing their functions (i.e. service, supply, maintenance, cals, mods, PEB, special tools, etc.) in accordance with applicable references. (1371-MANT-2001g)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX H - MAINTENANCE MANAGEMENT

LESSON ID: C-23H01 **HOURS:** 5.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ORGANIZATIONAL MAINTENANCE

8 . Given the requirement, state the types of GCSS-MC generated reports necessary for users to maintain, consolidate, and monitor service, maintenance and supply activities in accordance with applicable references. (1371-MANT-2001h)

NOTE(S): This class will teach the student on Marine Corps program requirements for maintenance of organic engineer equipment. Students will be instructed on proper procedures for tracking and inducting equipment into the maintenance cycle and how to read typical maintenance reports. GCSS-MC capabilities will be discussed.

ORM Statement: There are no hazards associated with this lesson.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Applicable GCSS-MC Procedural Notices (GPN)	GPN	
Appropriate Technical Manuals		
Consumer Level Supply Policy Manual	MCO P4400.150_	
Ground Equipment Record Procedures	TM 4700-15/1_	
How to Conduct Training	MCRP 3-0B	
UNIT SOP Unit's Standing Operating Procedures		
Users Manual MIMMS	UM 4790-5	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX H - MAINTENANCE MANAGEMENT

LESSON ID: C-23H01XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ORGANIZATIONAL MAINTENANCE WRITTEN EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(W)	1.00	30 : 1		

MEDIA: HO, REF

TERMINAL LEARNING OBJECTIVE(S):

1 . With access to Global Combat Support System-Marine Corps (GCSSMC), combat engineer equipment, chests, sets and kits, equipment records, maintenance forms and references, maintain the unit's engineer equipment, chests, sets and kits maintenance programs to ensure maintenance management functions, maintenance resources, production, and information conform to unit MMSOP requirements per the references. (1371-MANT-2001)

ENABLING LEARNING OBJECTIVE(S):

1 . Given the requirement, state the purpose of maintenance/maintenance management in accordance with MCO P4790.2_ MIMMS Field Procedure Manual and other applicable references. (1371-MANT-2001a)

2 . Given the requirement and references, state the requirements to maintain publications for unit equipment, sets, chests and kits in accordance with MCO P4790.1_. (1371-MANT-2001b)

3 . Given the requirement, a notional Table of Equipment (T/E), and references, state procedures to inventory items, equipment sets, chests and kits that are annotated on the Consolidate Memorandum Receipt (CMR) in accordance with applicable references. (1371-MANT-2001c)

4 . Given the requirement, a notional Table of Equipment (T/E), a Consolidate Memorandum Receipt (CMR), and references, state procedures to report discrepancies (unserviceable, missing, excessive items, etc.) in accordance with applicable references. (1371-MANT-2001d)

5 . Given the requirement, state the purpose of Global Combat Support System-Marine Corps (GCSS-MC) that highlights the benefits and capabilities in accordance with applicable references. (1371-MANT-2001e)

6 . Given the requirement, a notional Table of Equipment (T/E), applicable forms or reports, and references, state requirements to maintain equipment folders/forms/GCSS-MC to ensure proper dispatching procedures are being enforced, that preventive and corrective maintenance are being performed as required, and that equipment usage/logs are properly maintained and inputted into GCSS-MC data base(s) in accordance with applicable references. (1371-MANT-2001f)

7 . Given the requirement, state the different service requests in GCSS-MC by describing their functions (i.e. service, supply, maintenance, cals, mods, PEB, special tools, etc.) in accordance with applicable references. (1371-MANT-2001g)

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX H - MAINTENANCE MANAGEMENT

LESSON ID: C-23H01XW **HOURS:** 1.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ORGANIZATIONAL MAINTENANCE WRITTEN EXAM

8 . Given the requirement, state the types of GCSS-MC generated reports necessary for users to maintain, consolidate, and monitor service, maintenance and supply activities in accordance with applicable references. (1371-MANT-2001h)

NOTE(S): This exam will test the acquired knowledge of the students in maintenance management procedures needed for NCO billet in the Operating Forces. This test consist of several scenarios, forms, and multiple-choice questions for students to master.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Applicable GCSS-MC Procedural Notices (GPN)	GPN	
Appropriate Technical Manuals		
Consumer Level Supply Policy Manual	MCO P4400.150_	
Ground Equipment Record Procedures	TM 4700-15/1_	
How to Conduct Training	MCRP 3-0B	
UNIT SOP Unit's Standing Operating Procedures		
Users Manual MIMMS	UM 4790-5	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX I - TRAINING TECHNIQUES

LESSON ID: C-23I01 **HOURS:** 1.00
TYPE: Task Oriented **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: GUIDED DISCUSSION

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
IL	1.00	30 : 1		

MEDIA: CPU, DB, HO, PPT, SMB, SO

TERMINAL LEARNING OBJECTIVE(S):

1 . Given instructional materials and references, lead guided discussion to influence attitudes and ensure the transfer of knowledge. (ILC-IMPL-2100)

ENABLING LEARNING OBJECTIVE(S):

1 . Given instructional materials and references, demonstrate an understanding of the definition of guided discussion based on performance in accordance with MCRP 6-11B W/CH 1, Appendix A. (ILC-IMPL-2100a)

2 . Given instructional materials and references, develop discussion leader's outline to assist the instructor in leading the guided discussion in accordance with MCRP 6-11B W/CH 1. (ILC-IMPL-2100b)

3 . Given instructional materials and references, prepare for a guided discussion to ensure guided discussion fulfills desired learning outcomes in accordance with MCRP 6-11B W/CH 1. (ILC-IMPL-2100c)

4 . Given instructional materials and references, facilitate a guided discussion to fulfill desired learning outcomes in accordance with MCRP 6-11B W/CH 1. (ILC-IMPL-2100d)

5 . Given instructional materials and references, evaluate the guided discussion to ensure achievement of learning outcomes. (ILC-IMPL-2100e)

NOTE(S): TECOM directive implementing Values Based Leadership (VBL) task "Lead Guided Discussion" (ILC-IMPI-2100) will be covered during this class. Students will be taught techniques to lead a guided discussion in accordance with MCRP 6-11B, Marine Corps Values: A User's Guide for Discussion. Students will individually present a guided discussion during practical application time to the instructors.

ORM Statement: There are no hazards associated with this lesson.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Active Training: Silberman	T3EXTRef ISBN 0-7879-7623-7	
Marine Corps Values: A User's Guide for Discussion Leaders	MCRP 6-11B W/CH 1	
McKeachie's Teaching Tips: McKeachie	T3EXTRef ISBN 0-618-11649-4	
Planning Programs for Adult Learners: Caffarella	T3EXTRef ISBN 0-7879-5225-7	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX I - TRAINING TECHNIQUES

LESSON ID: C-23I01XP **HOURS:** 5.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: GUIDED DISCUSSION PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	5.00	30 : 3		

MEDIA: PEC

TERMINAL LEARNING OBJECTIVE(S):

1 . Given instructional materials and references, lead guided discussion to influence attitudes and ensure the transfer of knowledge. (ILC-IMPL-2100)

ENABLING LEARNING OBJECTIVE(S):

1 . Given instructional materials and references, demonstrate an understanding of the definition of guided discussion based on performance in accordance with MCRP 6-11B W/CH 1, Appendix A. (ILC-IMPL-2100a)

2 . Given instructional materials and references, develop discussion leader's outline to assist the instructor in leading the guided discussion in accordance with MCRP 6-11B W/CH 1. (ILC-IMPL-2100b)

3 . Given instructional materials and references, prepare for a guided discussion to ensure guided discussion fulfills desired learning outcomes in accordance with MCRP 6-11B W/CH 1. (ILC-IMPL-2100c)

4 . Given instructional materials and references, facilitate a guided discussion to fulfill desired learning outcomes in accordance with MCRP 6-11B W/CH 1. (ILC-IMPL-2100d)

5 . Given instructional materials and references, evaluate the guided discussion to ensure achievement of learning outcomes. (ILC-IMPL-2100e)

COMBAT ENGINEER NCO

Concept Card Report

ANNEX I - TRAINING TECHNIQUES

LESSON ID: C-23I01XP **HOURS:** 5.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: GUIDED DISCUSSION PERFORMANCE EXAM

NOTE(S): This exam will be implemented during non-academic time based on training schedules for Basic Combat Engineers in the training cycle (safety stand-downs, safety briefs prior to 72s/96s, safety briefs prior to weekend liberty) which is depicted on "Commander's Time/Values Training" Concept Card in CID M031302 (BCE). Students will conduct a guided discussion covering one of the topics directed by TECOM for Values Based Training (VBT), which are as follows:

"Prevent Suicide" (MCRD-VALU-1010)
"Describe Stresses of Combat" (MCRD-LDR-1017)
"Sexual Assault Prevention and Response" (MCRD-VALU-1011)
"Illegal Drugs" (MCRD-VALU-1003)
"Describe the Marine Corps Policy on Hazing" (MCRD-VALU-1007)

The evaluation and remediation of this exam will be conducted by the students and monitored by CEIC staff/instructors.

ORM Statement: There are no hazards associated with this exam.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Active Training: Silberman	T3EXTRef ISBN 0-7879-7623-7	
Marine Corps Values: A User's Guide for Discussion Leaders	MCRP 6-11B W/CH 1	
McKeachie's Teaching Tips: McKeachie	T3EXTRef ISBN 0-618-11649-4	
Planning Programs for Adult Learners: Caffarella	T3EXTRef ISBN 0-7879-5225-7	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX J - FIELD EXERCISE

LESSON ID: C-23J01XP **HOURS:** 16.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC) FEX PERFORMANCE EXAM

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
X(P)	16.00	30 : 6		

MEDIA: 782 GEAR, AIO, FLAK, HELMET, MAPS, MU, PEC, STBL, TF

TERMINAL LEARNING OBJECTIVE(S):

1. Given an operating environment, a positively identified explosive hazard, combat engineer equipment, Class V, personal protective equipment, commander's decision and references, reduce Explosive Hazards (EH) by calculating, placing and detonating an explosive charge that will result in the reduction of the explosive hazard and allow for assured mobility in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023)
2. Given an operating environment, suspected explosive hazards, combat engineer equipment, field protective equipment and publications/ORDATA II, identify Explosive Hazards (EH) by catagory, country of orgin, type of function, safeties and conditions. (1371-MOBL-2022)
3. Given a tactical situation, a route/area to be cleared, clearance equipment, a map, and an operation order, lead Route and Area Clearance Operations to locate, identify, mark, and/or reduce all explosive/non-explosive obstacles on the designate route/area. (1371-MOBL-2021)
4. Given a tactical situation, a route to be swept, route sweeping equipment, a map, personnel, and a route sweep order, lead a dismounted route sweep to locate, mark, and/or reduce all explosive hazards/obstacles on the designated route in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018)

ENABLING LEARNING OBJECTIVE(S):

1. Given a tactical situation and a dismounted route sweep mission, visually identify the probable location for explosive hazard threat emplacement per threat doctrine and MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018a)
2. As a member of a team, given a tactical situation, a route sweep mission and all necessary tools, Class V and equipment, conduct dismounted route sweep operations to locate all explosive hazards (IEDs, mines, boobytraps, etc.), ensuring they are detected, marked, and/or reduced in accordance with MCRP 3-17.2D Explosive Hazard Operations. (1371-MOBL-2018d)
3. Given a tactical scenario, a route clearance order, Class V, engineer tools and equipment, and as a member of a team, conduct mounted route clearing operations to ensure sufficient mobility to support the concept of operations and the commander's intent in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations and applicable references. (1371-MOBL-2021i)

COMBAT ENGINEER NCO

Concept Card Report

ANNEX J - FIELD EXERCISE

LESSON ID: C-23J01XP **HOURS:** 16.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC) FEX PERFORMANCE EXAM

4 . Without aid of references, identify markers and indicators of explosive hazards in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2022b)

5 . Without aid of references, provided an Improvised Explosive Device (IED) course, identify IEDs in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device Defeat Operations. (1371-MOBL-2022c)

6 . Provided an Improvised Explosive Device trail, suspected explosive hazards (EH) and without references, execute the 5 C's once contact is made with an explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023b)

7 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, prepare a firing system for reduction charge in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023h)

8 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, construct a charge in order to reduce an explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023i)

9 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, follow the steps of preparing for detonation to reduce explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023j)

10 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, place a charge that will result in reducing the explosive hazard in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023k)

11 . Provided an Improvised Explosive Device trail, explosive hazards (EH), engineer equipment and materials, Class V, and without references, detonate the charge to achieve high order detonation to reduce explosive obstacle in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations and applicable references. (1371-MOBL-2023l)

12 . With aid of references and recorded data, report the required data of the explosive hazard (reduced or bypassed) in accordance with MCIP 3-17.01 Combined Arms Improvised Explosive Device (IED) Defeat Operations. (1371-MOBL-2023p)

SUMMARY OF AMMUNITION REQUIREMENT(S):

EXPENDED UNIT

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX J - FIELD EXERCISE

LESSON ID: C-23J01XP **HOURS:** 16.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC) FEX PERFORMANCE EXAM

DODIC	NOMENCLATURE	LO	UNITS PER STUDENT	UNITS FOR SUPPORT	OF ISSUE
M023	Chg, Demo Block M112 1-1/4 pound C-4	1371-MOBL-2018	0.333	2.000	EA
		DODIC TOTALS:	0.333	2.000	
MN08	Ign, Time Fuse with Shock Tube Capability M81	1371-MOBL-2021	0.000	4.000	EA
		DODIC TOTALS:	0.000	4.000	
MN88	Cap, Blasting, 500 ft mini-tube M21	1371-MOBL-2021	0.000	3.000	EA
		DODIC TOTALS:	0.000	3.000	
MN90	Cap, Blasting, 1000 ft mini-tube M23	1371-MOBL-2021	0.333	2.000	EA
		DODIC TOTALS:	0.333	2.000	

NOTE(S): This is a capstone event to allow the students to conduct route reconnaissance, route and area clearance and explosive hazards locating, interrogating, identifying, and reducing in a field environment that is scenario driven.

This exam (scenario based) includes T&R tasks 1371-MOBL-2018 "Lead Dismounted Route Sweep", 1371-MOBL-2021 "Lead Route and Area Clearance Operations (RAAC)", 1371-MOBL-2022 "Identification of Explosive Hazards", and 1371-MOBL-2023 "Reduce Explosive Hazards". Students will be evaluated utilizing a performance checklist with RAAC equipment, robots, detectors, engineer kits, and Class V material for mastery.

8 hours of training will be conducted during low visibility (night time) for dismounted operations.

ORM Statement: Initial RAC 1, Residual RAC 3

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Appropriate Equipment Manual		
Appropriate Reference Materials		
Appropriate Technical Manuals		
Combined Arms Improvised Explosive Device Defeat Operations	MCIP 3-17.01	
Combined Arms Mobility Operations	MCWP 3-17.8	
Engineer Field Data	MCRP 3-17A	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX J - FIELD EXERCISE

LESSON ID: C-23J01XP **HOURS:** 16.00
TYPE: Exam **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ROUTE AND AREA CLEARANCE (RAAC) FEX PERFORMANCE EXAM

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Engineer Forms and Reports	MCRP 3-17B	
Engineer Operations	MCWP 3-17	
Engineer Reconnaissance	MCWP 3-17.4	
Engineering Operations	MCWP 3-17	
Explosive Hazards Operations	MCRP 3- 7.2D	
Explosives and Demolitions	MCRP 3-17.7L	
Ground Combat Operations	MCWP 3-1	
MAGTF Breaching Operations	MCWP 3-17.3	
Military Operations on Urbanized Terrain (MOUT)	MCWP 3-35.3	
Supported Battalion SOP		

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX Z - ADMINISTRATIVE

LESSON ID: Z001 **HOURS:** 3.50
TYPE: Administrative **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: ORIENTATION

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
Administative	3.50	30 : 1		

MEDIA: SH, SO

NOTE(S): Staff briefings and courseware will be presented during this time. All students will need to be present. Students will complete Home Town News Releases and sign school academic and conduct regulations.

ORM Staement: There are no hazards associated with this event.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Management of Marine Corps Formal Schools and Training Detachments	MCO 1553.2_	
School Academic Standing Operating Procedures (SASOP)	ScolO P1500.5_	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX Z - ADMINISTRATIVE

LESSON ID: Z002 **HOURS:** 2.00
TYPE: Administrative **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: CHECKOUT

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
CKO	2.00	30 : 1		

MEDIA: HO

NOTE(S): This time is utilized for students to check out of company, medical, dental, and other services prior to graduation.

ORM Statement: There are no hazards associated with this event.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
School Academic Standing Operating Procedures (SASOP)	ScolO P1500.5_	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX Z - ADMINISTRATIVE

LESSON ID: Z003 **HOURS:** 1.00
TYPE: Administrative **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: GRADUATION

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
GRAD	1.00	30 : 1		

MEDIA: GC

NOTE(S): Graduation is a formal event. Students will receive a certificate from the Commanding Officer of Combat Engineer Instruction Company. Academic and Leadership honor graduates will recieve special recognition and awards.

ORM Statement: There are no hazards associated with this event.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
School Academic Standing Operating Procedures (SASOP)	ScolO P1500.5_	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX Z - ADMINISTRATIVE

LESSON ID: Z004 **HOURS:** 69.00
TYPE: Administrative **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: PHYSICAL TRAINING/PERSONAL HYGIENE

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
PH	34.50	30 : 1		
PT	34.50	30 : 1		

MEDIA: N/A

NOTE(S): Students will conduct physical training as prescribed by School SOP and MCOs. Students will conduct an inventory/final PFT/CRT and participate in the Combat Conditioning Program daily.

ORM Statement: Initial RAC=4, Residual RAC=5

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Marine Corps Physical Fitness Program	MCO P6100.13, w/ch1	
School Academic Standing Operating Procedures (SASOP)	ScolO P1500.5_	

Date: 20160211

COMBAT ENGINEER NCO

Concept Card Report

ANNEX Z - ADMINISTRATIVE

LESSON ID: Z005 **HOURS:** 1.00
TYPE: Administrative **INITIAL RAC:**
CATEGORY: Training **RESIDUAL RAC:**
TITLE: END OF COURSE CRITIQUE

METHOD	HOURS	S:I RATIO	INSTRUCTOR TYPE	FACILITY
EOC	1.00	30 : 1		

MEDIA: HO

NOTE(S): All students will be issued a standardized critique per school requirements to fill out. All comments will be reviewed by Class Advisor, Course Chief, Academics Chief, and Academics Officer, for commendable and derogatory remarks dealing with knowledge obtained, conduct and safety of course.

REFERENCE - TITLE	PUBLICATION ID	CHAPTER/PAGE
Local Standard Operating Procedures (SOP)		
Management of Marine Corps Formal Schools and Training Detachments	MCO 1553.2_	