

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-ADMN-1001

TASK BEHAVIOR: Manage unit training

DATE OF LEARNING ANALYSIS: 20121001

Performance Step: 1. Determine mission requirements based on unit missions, Mission Essential Task Lists, Mission Performance Standards, Collective Training Events and Individual Training Events.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify individual MOS tasks
 - (a) 2. KHT/BAT identify collective MOS tasks
 - (a) 3. KHT/BAT utilize T&R Manual
 - (a) 4. KHT/BAT identify a Mission Essential Task (MET)
 - (b) 5. BAT define sustainment training
 - (b) 6. BAT define train-up training
 - (b) 7. BAT define cross training
 - (b) 8. BAT define Managed On-the-Job Training (MOJT)
 - (b) 9. BAT describe an individual training evaluation program
 - (c) 10. BAT utilize the MCRP 3-0A & MCRP 3-0B

Performance Step: 2. Determine current unit capabilities, both individual and unit proficiency.

- Knowledge /Skills:
- (a) 1. KHT/BAT analyze unit mission requirements
 - (a) 2. BAT determine unit-training goals
 - (a) 3. BAT analyze the current unit training status
 - (c) 4. BAT inventory available training resources
 - (c) 5. BAT analyze impact of external influences

Performance Step: 3. Identify training shortfalls and strengths of unit.

- Knowledge /Skills:
- (a) 1. BAT evaluate pretest results
 - (c) 2. BAT identify internal resources
 - (c) 3. BAT identify internal resource shortfalls
 - (c) 4. BAT identify external resources
 - (e) 5. BAT identify external influences that negatively affect training goals
 - (c) 6. BAT evaluate unit SOPs for gaps
 - (c) 7. KHT/BAT research authoritative material (i.e. MCRPs, MCWPs, FMs, TMs, etc...) to fill gaps in SOPs
 - (c) 8. BAT gather input for SMEs



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- (g) 9. KHT/BAT evaluate the conduct of training
- (g) 10. KHT/BAT conduct post training evaluations to identify improvement or shortfalls
- (g) 11. BAT identify training problems
- (d) 12. KHT/BAT conduct an Operational Risk Assessment (ORA) on specified training to be implemented

Performance Step: 4. Determine specific training objectives to correct shortfalls in accordance with T&R manual and METs.

- Knowledge /Skills:
- (a) 1. BAT identify individuals to be trained
 - (a) 2. KHT/BAT identify individual tasks
 - (a) 3. BAT identify units to be trained
 - (a) 4. KHT/BAT identify collective tasks
 - (c) 5. BAT prioritize training events
 - (c) 6. BAT chain training events

Performance Step: 5. Develop logical sequence for training individual skills and collective task events.

- Knowledge /Skills:
- (c) 1. BAT sequence training events
 - (c) 2. BAT chain training events
 - (c) 3. KHT/BAT organize training from individual to collective tasks as required
 - (c) 4. BAT determine if the training is progressive in nature (crawl, walk, run)
 - (c) 5. BAT select training settings, methods, and media to support training
 - (c) 6. BAT evaluate time required to complete required training
 - (c) 7. BAT determine required resources to conduct training (trainers, facilities, ranges, vehicles, Class IV & V, etc...)
 - (e) 8. BAT phase in resource requirements to support training
 - (e) 9. KHT/BAT develop a training plan
 - (e) 10. KHT/BAT develop a training schedule

Performance Step: 6. Brief commander on training plan, as required.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct a military brief

Performance Step: 7. Prepare a training schedule utilizing backwards planning.

- Knowledge /Skills:
- (d) 1. BAT analyze a training plan
 - (d) 2. BAT develop an outline of training activities
 - (a,e) 3. BAT determine the time allotted to conduct training
 - (c) 4. BAT determine time requirements to complete tasks



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- (e) 5. KHT/BAT coordinate resource support to conduct training
- (e) 6. BAT identify the parts of a daily training schedule
- (e) 7. BAT identify the parts of a weekly training schedule
- (e) 8. BAT identify the entries required to complete a training schedule (daily/weekly)

Performance Step: 8. Issue the order for training.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct a military brief
 - (del) 2. BAT conduct training as planned

Performance Step: 9. Coordinate logistical support.

- Knowledge /Skills:
- (f) 1. KHT/BAT complete a Training Support Request (TSR)
 - (e) 2. KHT/BAT determine support required
 - (f) 3. KHT/BAT submit logistical support requests to appropriate staff sections
 - (f) 4. BAT coordinate with external units (i.e. range control, ASP, etc...)
 - (f) 5. BAT follow-up on TSR as required by SOPs

Performance Step: 10. Conduct a after action (hotwash) as required.

- Knowledge /Skills:
- (g) 1. KHT/BAT discuss training conducted
 - (g) 2. KHT identify proper training
 - (del) 3. KHT/BAT brief on training shortfalls



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LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-ADMN-1002

TASK BEHAVIOR: Deliver a military brief

DATE OF LEARNING ANALYSIS: 20120612

Performance Step: 1. Review the operations order and commander's intent.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify the commander's guidance/intent
 - (b) 2. BAT analyze METT-T

Performance Step: 2. Review the engineer situation.

- Knowledge /Skills:
- (b) 1. BAT identify impact of METT-T analysis on engineer operations
 - (b) 2. BAT conduct engineer analysis of available intelligence
 - (b) 3. BAT determine additional intelligence required
 - (b) 4. BAT identify engineer personnel readiness
 - (b) 5. BAT identify engineer equipment readiness
 - (b) 6. BAT identify current engineer operations
 - (b) 7. BAT identify future engineer operations
 - (b) 8. BAT identify Bulk III assets
 - (b) 9. BAT identify Bulk IV assets
 - (b) 10. BAT identify Bulk V assets
 - (b) 11. BAT identify engineer operations
 - (b) 12. BAT determine classes of supply to execute engineer operations

Performance Step: 3. Develop a briefing outline for the engineer situation.

- Knowledge /Skills:
- (a) 1. BAT identify types of military briefs
 - (a) 2. BAT select appropriate type of military brief as situation indicates
 - (b) 3. BAT analyze topic
 - (b) 4. BAT analyze target audience
 - (b) 5. BAT research topic
 - (d) 6. BAT write an outline
 - (c) 7. BAT organize the brief
 - (d) 8. BAT prepare a briefing packet
 - (d) 9. KHT rehearse for a brief
 - (e) 10. BAT employ visual aids
 - (e) 11. BAT deliver a brief



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(e) 12. BAT employ effective briefing techniques

Performance Step: 4. Brief engineer situation to the commander.

- Knowledge /Skills:
- (e) 1. KHT/BAT advise the commander on recommended engineer support
 - (e) 2. KHT/BAT advise the commander on Requests for Information (RFI)
 - (del) 3. BAT analyze METT-T
 - (del) 4. BAT analyze intel reports
 - (e) 5. BAT develop general engineering plan
 - (g) 6. BAT develop a survivability plan
 - (h) 7. BAT develop a gap crossing plan
 - (i) 8. BAT develop a countermobility plan
 - (j) 9. BAT develop a mobility plan
 - (e) 10. KHT/BAT advise the commander on effects of terrain and weather
 - (f) 11. BAT determine the effects of terrain and weather on general engineering operations
 - (g) 12. BAT determine the effects of terrain and weather on the survivability operations
 - (h) 13. BAT determine the effects of terrain and weather on gap crossing operations
 - (i) 14. BAT determine the effects of terrain and weather on countermobility operations
 - (j) 15. BAT determine the effects of terrain and weather on mobility operations
 - (del) 16. BAT develop an engineer estimate of supportability
 - (del) 17. BAT identify non-organic engineer support
 - (f) 18. KHT/BAT identify logistical requirements to S-4/G-4
 - (del) 19. BAT calculate logistical requirements
 - (del) 20. BAT identify logistical shortfalls
 - (e) 21. KHT/BAT employ effective briefing techniques
 - (f) 22. BAT deliver a base camp construction plan brief
 - (e) 23. BAT employ visual aids
 - (e) 24. BAT create a engineer overlays and products
 - (g) 25. BAT deliver a survivability plan brief
 - (h) 26. BAT deliver a gap crossing operation brief
 - (i) 27. BAT deliver a obstacle plan brief
 - (j) 28. BAT deliver a obstacle breaching plan brief



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LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-CMOB-1001

TASK BEHAVIOR: Plan the emplacement of an obstacle

DATE OF LEARNING ANALYSIS: 20121116

Performance Step: 1. Analyze requirements outlined in the obstacle plan.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify countermobility considerations
 - (b) 2. KHT/BAT identify components of US explosive munitions/obstacles
 - (a) 3. KHT/BAT perform terrain analysis
 - (c) 4. KHT/BAT explain characteristics of US explosive munitions
 - (d) 5. KHT employ explosive obstacle (minefield) with the respect to commander's intent
 - (d) 6. KHT/BAT employ explosive obstacle so they tie into existing and reinforcing obstacles
 - (a) 7. HKO enemy breaching capabilities
 - (a) 8. KHT/BAT identify elements of the obstacle plan that call for constructed obstacles
 - (del) 9. KHT/BAT complete engineer recon forms and reports
 - (i) 10. KHT/BAT employ non-explosive obstacle so they tie into existing and reinforcing obstacles

Performance Step: 2. Conduct a site recon.

- Knowledge /Skills:
- (del) 1. KHT/BAT task organize personnel and equipment to perform engineer recon
 - (del) 2. KHT perform engineer reconnaissance
 - (a) 3. KHT evaluate terrain
 - (a) 4. KHT/BAT identify restrictive terrain/obstacle criteria
 - (a) 5. BAT determine the effects of terrain and weather
 - (del) 6. KHT/BAT identify indigenous materials for obstacle construction

Performance Step: 3. Task organize personnel and equipment.

- Knowledge /Skills:
- (f) 1. KHT/BAT identify types of explosive obstacle laying teams
 - (f) 2. KHT/BAT identify specific equipment required for each team
 - (o) 3. KHT/BAT establish explosive obstacle construction laying teams
 - (del) 4. KHT/BAT use components of a pioneer tool kit
 - (g) 5. KHT/BAT use the minefield marking kit
 - (a) 6. KHT identify the tasks that are called for in the mission



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- (del) 7. KHT/BAT identify the best suited/required equipment for a specified task
- (o) 8. KHT assign teams to tasks
- (o) 9. KHT assign blade assets
- (del) 10. KHT/BAT calculate man hours
- (del) 11. KHT/BAT calculate equipment hours

Performance Step: 4. Identify logistical requirements.

- Knowledge /Skills:
- (del) 1. BAT develop an engineer estimate of supportability
 - (e) 2. KHT/BAT perform explosive munition calculations
 - (e) 3. HKO load carrying capabilities of organic motor transport assets
 - (e) 4. HKO man-hours per explosive obstacle to install
 - (j) 5. KHT calculate BOM for wire obstacle construction
 - (k) 6. KHT/BAT identify components of a log obstacle
 - (k) 7. KHT/BAT identify the components of a wire obstacle
 - (del) 8. KHT order Class IV material
 - (l) 9. KHT/BAT construct a tank ditch
 - (n) 10. KHT/BAT calculate material
 - (del) 11. KHT perform production estimations
 - (del) 12. BAT identify logistical shortfalls to S-4/G-4
 - (n) 13. BAT identify materials required for obstacle construction
 - (k) 14. BAT identify materials existing on the battlefields for construction of obstacles
 - (j,m,n) 15. KHT/BAT use Rams Head Nail gun to bolt wood/engineer stakes to pavement
 - (m,n) 16. BAT identify uses of HESCO
 - (del) 17. BAT identify uses for pre-fabricated bunkers
 - (i) 18. KHT/BAT identify non-explosive obstacle intent
 - (i) 19. KHT/BAT determine type of non-explosive obstacle to be used

Performance Step: 5. Coordinate security with supported maneuver elements as required.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify security requirements
 - (del) 2. KHT/BAT submit requests for support as required

Performance Step: 6. Coordinate obstacle overwatch and coverage by fires with supported unit.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify appropriate staff sections
 - (del) 2. KHT/BAT submit required reports



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- (del) 3. KHT/BAT submit requests
- (del) 4. KHT/BAT brief commander on the obstacle plan
- (del) 5. KHT/BAT recommend location of over watch positions
- (del) 6. KHT/BAT recommend location of fires to enhance obstacles

Performance Step: 7. Verify the obstacle is effective based on the principles of obstacle employment.

- Knowledge /Skills:
- (d) 1. KHT/BAT select the proper explosive obstacle (minefield)
 - (a) 2. KHT/BAT select an obstacle to maximize its effect on the enemy
 - (a) 3. KHT/BAT emplace obstacles to tie in with existing natural or man-made obstacles
 - (a) 4. KHT/BAT ensure obstacles support both the obstacles plan and the commander's intent

Performance Step: 8. Monitor construction/installation of the obstacle.

- Knowledge /Skills:
- (del) 1. KHT/BAT utilize communication assets
 - (g) 2. KHT/BAT utilize control measures within the explosive obstacle (minefield)
 - (d) 3. KHT emplace anti-tank explosive obstacle
 - (q) 4. BAT construct explosive obstacles
 - (d) 5. KHT emplace anti-personnel explosive obstacle
 - (q) 6. BAT employ firing devices (i.e. M142 Multi-firing device)
 - (q) 7. BAT employ expedient explosive obstacles
 - (b) 8. HKO mine cluster
 - (b) 9. HKO minefield components
 - (q) 10. BAT employ munitions (i.e. Claymore mine)
 - (g,j,k,l,m) 11. HKO obstacle construction
 - (g,j,k,l,m) 12. BAT construct obstacles so discrepancies can be identified during the construction phase
 - (p) 13. BAT construct log non-explosive obstacles
 - (p) 14. BAT construct wire obstacles
 - (p) 15. BAT employ field expedient obstacles

Performance Step: 9. Submit required engineer reports.

- Knowledge /Skills:
- (h) 1. KHT identify explosive obstacle (minefield) reports
 - (h) 2. KHT identify explosive obstacle (minefield) records
 - (h) 3. KHT/BAT fill out explosive obstacle (minefield) reports
 - (h) 4. KHT/BAT fill out explosive obstacle (minefield) records



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- (del) 5. BAT create a engineer obstacle overlays
- (del) 6. BAT complete a countermobility worksheet
- (del) 7. BAT create a Modified Combined Obstacle Overlay (MCOO)



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LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-CMOB-1002

TASK BEHAVIOR: Plan construction of vehicle checkpoints as a part of an countermobility plan

DATE OF LEARNING ANALYSIS: 20130313

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (del) 2. KHT/BAT identify countermobility considerations
 - (del) 3. KHT/BAT complete engineer recon forms and reports

Performance Step: 2. Conduct a site reconnaissance.

- Knowledge /Skills:
- (del) 1. KHT/BAT complete engineer recon forms and reports
 - (del) 2. KHT/BAT conduct a route recon
 - (del) 3. KHT/BAT identify critical info requirements of the terrain
 - (del) 4. KHT/BAT task organize personnel and equipment to perform engineer recon
 - (del) 5. KHT/BAT identify possible sources of information

Performance Step: 3. Develop obstacle/barrier plan as required to prevent bypass of the checkpoint.

- Knowledge /Skills:
- (del) 1. BAT define the battlefield environment
 - (del) 2. BAT describe battlefield effects
 - (del) 3. BAT analyze the threat
 - (a) 4. BAT identify the type of checkpoint to utilize to accomplish the mission
 - (b) 5. BAT tie checkpoint in with existing terrain and obstacles to prevent bypass

Performance Step: 4. Design vehicle checkpoint to provide holding areas, personnel holding areas, search areas, active vehicle barriers, and overwatch positions.

- Knowledge /Skills:
- (a) 1. BAT describe the types of vehicle checkpoints (hasty/deliberate)
 - (a) 2. BAT identify the required parts of a checkpoint to support the mission
 - (a) 3. BAT identify the space required for the checkpoint
 - (a) 4. BAT identify the type of checkpoint to construct

Performance Step: 5. Develop bill of materials.

- Knowledge /Skills:
- (b) 1. BAT calculate the materials required to construct the checkpoint
 - (b) 2. BAT identify the required equipment
 - (del) 3. BAT identify logistical shortages to appropriate staff sections
 - (del) 4. BAT consolidate materials for requisition



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Performance Step: 6. Identify logistical requirements.

- Knowledge /Skills:
- (del) 1. KHT/BAT describe the impact of T/O and T/E
 - (del) 2. BAT recommend the appropriate uses for Engineer T/O and T/E
 - (del) 3. KHT/BAT task organize assets
 - (del) 4. KHT/BAT calculate man hours
 - (del) 5. KHT/BAT calculate equipment hours
 - (del) 6. BAT develop an engineer estimate of supportability
 - (del) 7. BAT coordinate Host Nation support
 - (del) 8. BAT identify logistical shortfalls
 - (del) 9. BAT submit logistical requirements to S-4

Performance Step: 7. Task organize personnel and equipment.

- Knowledge /Skills:
- (del) 1. BAT identify countermobility tasks
 - (del) 2. KHT/BAT describe the impact of T/O and T/E
 - (del) 3. BAT recommend the appropriate uses for Engineer T/O and T/E
 - (del) 4. BAT assign engineer assets by tasks

Performance Step: 8. Coordinate security with supported maneuver elements as required.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify security requirements
 - (del) 2. KHT/BAT determine support required
 - (del) 3. KHT/BAT submit support requests to appropriate staff sections

Performance Step: 9. Estimate construction time.

- Knowledge /Skills:
- (del) 1. KHT/BAT task organize assets
 - (del) 2. KHT/BAT calculate man hours
 - (del) 3. KHT/BAT calculate equipment hours
 - (del) 4. BAT apply construction management tools

Performance Step: 10. Generate sketches as required.

- Knowledge /Skills:
- (a) 1. KHT/BAT draw a scaled sketch
 - (a) 2. BAT identify configuration and space requirements for the position



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TASK: 1302-CMOB-1003

TASK BEHAVIOR: Prepare an obstacle plan

DATE OF LEARNING ANALYSIS: 20120720

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. BAT analyze METT-T
 - (del) 2. KHT/BAT conduct Intelligence Preparation of the Battlefield (IPB).
 - (del) 3. BAT define the battlefield environment
 - (del) 4. BAT define battlefield effects
 - (del) 5. BAT analyze battlefield effects
 - (del) 6. BAT determine threat courses of action
 - (del) 7. BAT identify additional intelligence required
 - (del) 8. BAT submit RFIs
 - (a) 9. BAT identify natural and/or existing obstacles
 - (b) 10. BAT determine the placement of reinforcing obstacles
 - (b) 11. BAT determine obstacle intent
 - (del) 12. BAT construct a Modified Combined Obstacle Overlay (MCOO)

Performance Step: 2. Conduct fires analysis.

- Knowledge /Skills:
- (del) 1. BAT determine availability of supporting fires
 - (b) 2. BAT identify placement of reinforcing obstacles
 - (b) 3. BAT identify obstacle intent
 - (c) 4. KHT/BAT recommend location of fires to enhance obstacles
 - (del) 5. BAT submit fire support request
 - (c) 6. KHT/BAT identify the effects of enemy fires
 - (c) 7. KHT/BAT conduct a comparison of friendly and enemy fires
 - (c) 8. KHT/BAT recommend location of over watch positions

Performance Step: 3. Determine obstacle intent integration with fires.

- Knowledge /Skills:
- (c) 1. KHT/BAT identify the appropriate fires to enhance an obstacles intent
 - (c) 2. HKO fires and the disrupt effect
 - (c) 3. HKO fires and the turn effect
 - (c) 4. HKO fires and the fix effect
 - (c) 5. HKO fires and the block effect



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Performance Step: 4. Determine obstacle priorities.

- Knowledge /Skills:
- (d) 1. BAT identify countermobility tasks
 - (d) 2. BAT identify the commanders priorities to be supported in the concept of operations
 - (del) 3. BAT identify engineer requirements of the mission
 - (del) 4. BAT identify logistical shortfalls
 - (d) 5. BAT sequence countermobility tasks
 - (del) 6. BAT assign engineer assets by task and priority
 - (del) 7. BAT employ engineer assets

Performance Step: 5. Determine mobility requirements.

- Knowledge /Skills:
- (del) 1. BAT analyze METT-T
 - (del) 2. BAT create modified combined obstacle overlay
 - (d) 3. BAT develop lanes through obstacles as the obstacle is emplaced
 - (e) 4. KHT/BAT develop a lane closure plan for emplaced obstacles
 - (f) 5. KHT/BAT develop a back-breach plan if required
 - (del) 6. BAT identify logistical requirements
 - (del) 7. BAT evaluate roads/routes to ensure they support the concept of operations
 - (del) 8. BAT evaluate the commander's maneuver plan

Performance Step: 6. Determine obstacle design and resourcing.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify significant features on the battle space
 - (del) 2. BAT describe the impact of engineer operation
 - (b) 3. BAT select appropriate obstacle type according to threat
 - (del) 4. BAT identify resources available on the battlefield
 - (a) 5. BAT identify expedient barriers
 - (a) 6. KHT/BAT identify existing obstacles
 - (a) 7. KHT/BAT identify reinforcing obstacles
 - (del) 8. BAT calculate materials required to construct/improve obstacles
 - (del) 9. BAT to identify required equipment
 - (del) 10. KHT/BAT calculate equipment hours
 - (del) 11. KHT/BAT calculate man hours
 - (del) 12. KHT/BAT task organize assets

Performance Step: 7. Prepare an overlay and obstacle plan appendix to operations order.



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- Knowledge /Skills:
- (del) 1. BAT develop an engineer estimate of supportability
 - (del) 2. BAT create modified combined obstacle overlay
 - (g) 3. BAT create an obstacle overlay
 - (g) 4. BAT create a countermobility worksheet
 - (del) 5. BAT develop engineer concept of operations
 - (del) 6. BAT develop engineer appendix



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LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-DEMO-1001

TASK BEHAVIOR: Plan for demolition operations

DATE OF LEARNING ANALYSIS: 20130521

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. BAT conduct METT-T analysis
 - (del) 2. BAT conduct map study
 - (del) 3. BAT identify key terrain
 - (del) 4. KHT/BAT conduct Intelligence Preparation of the Battlefield (IPB)
 - (del) 5. BAT identify additional intelligence required
 - (del) 6. BAT submit RFIs

Performance Step: 2. Conduct target analysis.

- Knowledge /Skills:
- (d) 1. KHT determine means of destruction
 - (d) 2. KHT determine critical decision points
 - (a) 3. KHT conduct demolitions reconnaissance
 - (d) 4. KHT determine the engineer impact by the proposed level of destruction
 - (b) 5. KHT explain the characteristics of targets and target materials
 - (b) 6. KHT analyze the target
 - (a) 7. KHT identify critical dimensions of target
 - (a) 8. KHT identify critical members of target as required

Performance Step: 3. Determine the amount of explosives required to achieve the desired effect.

- Knowledge /Skills:
- (del) 1. KHT calculate demolition charges
 - (del) 2. HKO military explosives
 - (del) 3. KHT explain the characteristics of military demolitions
 - (del) 4. KHT explain the effects of detonation
 - (del) 5. KHT predict the effects of the blast on the target

Performance Step: 4. Direct demo recon, as required.

- Knowledge /Skills:
- (a) 1. BAT determine reconnaissance requirements
 - (del) 2. BAT issue a warning order
 - (a) 3. BAT task organize personnel and equipment to conduct the reconnaissance
 - (a) 4. KHT supervise preparation for reconnaissance



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- (b) 5. KHT/BAT evaluate results of reconnaissance
- (del) 6. KHT/BAT develop and order
- (del) 7. KHT/BAT issue an order

Performance Step: 5. Analyze required information from the DA Form 2203-R.

- Knowledge /Skills:
- (a) 1. HKO data required to complete the DA form 2203 (Demo Recon Report)
 - (a) 2. KHT/BAT complete DA form 2203 (Demo Recon Report)
 - (del) 3. BAT create a map overlay utilizing engineer reconnaissance symbols
 - (del) 4. BAT identify appropriate staff section to submit reports

Performance Step: 6. Complete the demolition target folder.

- Knowledge /Skills:
- (c) 1. KHT/BAT identify the parts of a obstacle (target) folder
 - (c) 2. KHT/BAT identify the languages to use when completing a target folder
 - (c) 4. BAT identify when obstacle (target) folders are used
 - (c) 5. BAT compile information from reconnaissance forms and reports
 - (c) 6. BAT enter data in appropriate portions of the obstacle (target) folder

Performance Step: 7. Estimate the logistics required based on the demolition reconnaissance.

- Knowledge /Skills:
- (a) 1. BAT identify the target
 - (a) 2. BAT identify critical dimensions of the target
 - (b) 3. BAT perform demolition calculations
 - (d) 4. BAT task organize personnel and equipment
 - (c) 5. HKO explosive firing systems
 - (b) 6. KHT/BAT analyze engineer forms and reports

Performance Step: 8. Determine task organization of personnel and equipment.

- Knowledge /Skills:
- (d) 1. BAT identify tasks
 - (d) 2. KHT determine man-hour calculations
 - (e) 3. KHT employ appropriate personnel off of the table of the organization
 - (e) 4. KHT employ relevant assets of the table of equipment

Performance Step: 9. Prioritize targets based on commander's intent.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct a METT-T analysis
 - (del) 2. BAT identify the commander's intent
 - (del) 3. KHT/BAT analyze engineer capabilities to support tasks

Performance Step: 10. Complete Directed and/or Situational Obstacle matrices and overlays, as required.



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- Knowledge /Skills:
- (del) 1. BAT develop an engineer estimate of supportability
 - (del) 2. BAT create modified combined obstacle overlay
 - (del) 3. BAT create an overlay
 - (del) 4. BAT create a countermobility worksheet
 - (del) 5. BAT develop engineer concept of operations
 - (del) 6. BAT develop engineer appendix



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LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-DEMO-1002TASK BEHAVIOR: Detonate demolitionsDATE OF LEARNING ANALYSIS: 20130522Performance Step: 1. Review target folder.

Knowledge /Skills: (del) 1. HKO demoliton target folders
 (c) 2. KHT explain the characteristics of targets and target materials

Performance Step: 2. Conduct target reconnaissance (to obtain critical dimensions necessary for charge calculations and firing point location).

Knowledge /Skills: (del) 1. KHT/BAT conduct target reconnaissance
 (c) 2. KHT explain the characteristics of targets and target materials
 (c) 3. KHT analyze the target
 (c) 4. KHT identify critical dimensions of target
 (c) 5. KHT identify critical members of target

Performance Step: 3. Determine type of explosive to use.

Knowledge /Skills: (b) 1. HKO military explosives
 (b) 2. KHT explain the characteristics of military demolitions
 (c) 3. KHT explain the characteristics of targets and target materials
 (b) 4. KHT explain the effects of detonation
 (b) 5. KHT explain the characteristics/usage of a shaped charge
 (b) 6. KHT explain the characteristics/usage of a cratering charge
 (b) 7. KHT explain the characteristics/usage of a ditching charge
 (b) 8. KHT explain the characteristics/usage of a bangalore torpedo
 (b) 9. KHT explain the characteristics/usage of a steel cutting charge
 (b) 10. KHT explain the characteristics/usage of a timber cutting charge
 (b) 11. KHT explain the characteristics/usage of a counterforce charge
 (b) 12. KHT explain the characteristics/usage of a concrete breaching charge
 (b) 13. KHT explain the characteristics/usage of a saddle charge
 (b) 14. KHT explain the characteristics/usage of a diamond charge
 (b) 15. KHT explain the characteristics/usage of bridge demo charges
 (b) 16. KHT explain the characteristics/usage of a ribbon charge
 (b) 17. KHT explain the characteristics/usage of FLSC



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 4. Select formula calculation for single charge.

- Knowledge /Skills:
- (b) 1. Know Relative Effective Factor (REF)
 - (c) 2. KHT identify characteristics of the target
 - (b) 3. KHT predict the effects of the blast on the target
 - (c) 4. KHT locate proper formula on demo card (GTA 05-010-033)/MCRP 3-17A

Performance Step: 5. Determine number of charges/total amount of explosives and minimum safe distance.

- Knowledge /Skills:
- (c) 1. KHT compute formulas
 - (b) 2. KHT determine REF
 - (c) 3. KHT use REF to convert different types of explosives
 - (c) 4. KHT use problem solving format for formulas
 - (c) 5. KHT analyze the target
 - (c) 6. KHT identify critical dimensions of target
 - (c) 7. KHT identify critical members of target
 - (n) 8. KHT/BAT read safe standoff chart(s)
 - (n) 9. KHT/BAT determine standoff

Performance Step: 6. Place the charge(s) on the target.

- Knowledge /Skills:
- (c) 1. KHT identify critical dimensions of the target
 - (c) 2. KHT identify critical members of the target
 - (c) 3. KHT identify target characteristics
 - (g,m) 4. KHT/BAT position the charge on the target to achieve the desired effect
 - (g,m) 5. KHT/BAT construct a charge
 - (g,m) 6. HKO/BAT adhesion/attaching techniques
 - (g,m) 7. KHT/BAT select the method of placement

Performance Step: 7. Prime the charge.

- Knowledge /Skills:
- (f,l) 1. KHT/BAT tie knots with det cord (uli, alt tie #2, double overhand, girth hitch w/extra turn, cherry knot, spiral knot, quad knot, lineman's knot)
 - (f,l) 2. KHT/BAT identify det cord
 - (d,j) 3. KHT/BAT identify time fuse
 - (d,j) 4. KHT/BAT measure time fuse
 - (d,j) 5. KHT/BAT calculate time fuse
 - (d,j) 6. KHT/BAT create a non-electric firing system
 - (d,e,j,k) 7. KHT/BAT use crimpers



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (e,k) 8. KHT/BAT create an electric firing system
- (f,l) 9. KHT/BAT prime with det cord
- (f,l) 10. KHT/BAT use crimpers
- (d,j) 11. KHT/BAT do a test burn
- (e,k) 12. KHT/BAT tie a western union pigtail
- (e,k) 13. KHT/BAT tie two half hitches
- (a) 14. KHT identify the components of the squad demo kit

Performance Step: 8. Tamp as required.

- Knowledge /Skills:
- (g,m) 1. KHT/BAT explain the purpose of tamping
 - (g,m) 2. KHT/BAT determine if tamping is required to achieve the desired effect
 - (g,m) 3. KHT/BAT select proper material to tamp with
 - (g,m) 4. Know how much tamping is necessary

Performance Step: 9. Detonate the explosive(s).

- Knowledge /Skills:
- (h,n) 1. KHT/BAT operate a fuse igniter
 - (h,n) 2. KHT/BAT operate a blasting machine
 - (h,n) 3. KHT/BAT use a power source
 - (h,n) 4. KHT/BAT place blasting caps properly
 - (h,n) 5. KHT/BAT determine proper standoff distances
 - (h,n) 6. KHT/BAT use modern demolition initiators (MDI)
 - (h,n) 7. KHT/BAT identify safety concerns involved with detonating explosives (ORM)
 - (n) 8. KHT/BAT use shock tube

Performance Step: 10. Conduct battle damage assessment.

- Knowledge /Skills:
- (i) 1. KHT explain the proper use of debris
 - (i) 2. KHT fill out DA 2203

Performance Step: 11. Submit required engineer reports.

- Knowledge /Skills:
- (i) 1. KHT fill out a 2203
 - (i) 2. KHT fill out a DD 1249
 - (i) 3. KHT fill out an 1711-R



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-DEMO-1003

TASK BEHAVIOR: Engage targets with expedient demolitions

DATE OF LEARNING ANALYSIS: 20130116

Performance Step: 1. Review the mission.

- Knowledge /Skills:
- (a) 1. HKO mission intent
 - (a) 2. KHT determine proper materials needed to attack the target

Performance Step: 2. Construct a platter charge.

- Knowledge /Skills:
- (a) 1. KHT determine proper materials needed to construct the charge
 - (b) 2. KHT determine the amount of explosives required
 - (c) 3. KHT place the charge on the target
 - (e) 4. BAT place a platter charge

Performance Step: 3. Construct an expedient claymore charge.

- Knowledge /Skills:
- (a) 1. KHT determine proper materials needed to construct the charge
 - (b) 2. KHT determine the amount of explosives required
 - (c) 3. KHT place the charge on the target
 - (f) 4. BAT place a expedient claymore charge

Performance Step: 4. Construct a grape shot directional charge.

- Knowledge /Skills:
- (a) 1. KHT determine proper materials needed to construct the charge
 - (b) 2. KHT determine the amount of explosives required
 - (c) 3. KHT place the charge on the target
 - (g) 4. BAT place a grape shot charge

Performance Step: 5. Construct an omni (360 degree) charge.

- Knowledge /Skills:
- (a) 1. KHT determine proper materials needed to construct the charge
 - (b) 2. KHT determine the amount of explosives required
 - (c) 3. KHT place the charge on the target
 - (h) 4. BAT place a omni charge

Performance Step: 6. Construct expedient shaped charge.

- Knowledge /Skills:
- (a) 1. KHT determine proper materials needed to construct the charge
 - (b) 2. KHT determine the amount of explosives required
 - (c) 3. KHT place the charge on the target



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(d) 4. BAT place a expedient shape charge

Performance Step: 7. Construct expedient flame charge.

Knowledge /Skills: (del) 1. KHT determine proper materials needed to construct the charge
(del) 2. KHT determine the amount of explosives required
(del) 3. KHT determine the amount of fuel required
(del) 4. KHT place the charge on the target

Performance Step: 8. Construct a purpose built charge (based on mission requirements).

Knowledge /Skills: (a) 1. KHT determine proper materials needed to construct the charge
(b) 2. KHT determine the amount of explosives required
(c) 3. KHT place the charge on the target
(a) 4. KHT/BAT determine proper materials needed to construct a bangalore
(b) 5. KHT/BAT determine the amount of explosives for a bangalore
(i) 6. KHT/BAT place a expedient bangalore charge

Performance Step: 9. Engage the target.

Knowledge /Skills: (c) 1. KHT place the charge on the target
(del) 2. KHT prime the charge
(del) 3. KHT detonate the charge
(del) 4. KHT/BAT construct an expedient bangalore

Performance Step: 10. Confirm target reduction.

Knowledge /Skills: (b) 1. KHT/BAT determine that desired results are achieved



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-DEMO-1004

TASK BEHAVIOR: Plan destruction of Captured Enemy Ammunition (CEA)

DATE OF LEARNING ANALYSIS: 20121023

Performance Step: 1. Positively identify captured enemy ammunition (CEA).

- Knowledge /Skills:
- (a) 1. BAT determine types of ordnance categories
 - (a) 2. BAT identify ordnance features
 - (a) 3. BAT identify ordnance characteristics
 - (a) 4. BAT use ORDATA II
 - (b) 5. BAT use relevant publications
 - (c) 6. BAT request EOD support
 - (c) 7. BAT complete an EOD 9-line report
 - (a) 8. BAT identify ordnance that falls within the engineer scope for destruction
 - (a) 9. BAT identify ordnance that falls outside of the engineer scope for destruction
 - (a) 10. BAT determine appropriate actions to take when ordnance cannot be identified
 - (a) 11. BAT conduct searches for caches
 - (d) 12. BAT handle ordnance safely
 - (d) 13. KHT load/transport CEA for destruction at a later date/location

Performance Step: 2. Calculate minimum standoff distance to detonate CEA.

- Knowledge /Skills:
- (b) 1. BAT determine K-factor to determine minimum safe distance
 - (b) 2. BAT compute Net Explosive Weight (NEW)
 - (b) 3. BAT establish Surface Danger Zone (SDZ)
 - (b) 4. BAT employ individual protective measures
 - (b) 5. KHT apply Operational Risk Management (ORM)

Performance Step: 3. Coordinate with higher headquarters.

- Knowledge /Skills:
- (c) 1. BAT advise commander or appropriate actions
 - (d) 2. KHT apply ORM

Performance Step: 4. Destroy CEA.

- Knowledge /Skills:
- (e) 1. KHT/BAT construct charge for single item
 - (e) 2. KHT/BAT construct charge for multiple items



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (e) 3. KHT/BAT stack ordnance for destruction
- (e) 4. KHT/BAT place charges to destroy Captured Enemy Ammunition (CEA)
- (e) 5. KHT check SDZs
- (del) 6. KHT/BAT detonate explosives
- (b) 7. KHT/BAT trench, when appropriate, to mitigate blast effects
- (b) 8. KHT/BAT employ defilade to mitigate blast effects
- (e) 9. KHT/BAT establish a disposal area

Performance Step: 5. Confirm target destruction.

- Knowledge /Skills:
- (e) 1. BAT conduct post-blast assessments
 - (e) 2. BAT determine if hazard was removed
 - (e) 3. BAT determine if area is clear
 - (e) 4. BAT determine if there is any remaining UXO (Unexploded Ordnance)

Performance Step: 6. Report results to higher headquarters.

- Knowledge /Skills:
- (c) 1. KHT submit proper reports
 - (c) 2. BAT determine success/failure



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1001TASK BEHAVIOR: Design concrete mixDATE OF LEARNING ANALYSIS: 20130903Performance Step: 1. Determine the type of cement to be used.

- Knowledge /Skills:
- (b) 1. KHT identify types of Portland cement
 - (b) 2. KHT identify the uses of each type of Portland cement
 - (a) 3. KHT analyze job specifications
 - (a) 4. KHT read blueprints for concrete construction projects

Performance Step: 2. Identify water and aggregate for suitability.

- Knowledge /Skills:
- (c) 1. KHT select suitable water
 - (c) 2. HKO selecting salt water
 - (d) 3. KHT select maximum size aggregate
 - (d) 4. KHT determine maximum size aggregate
 - (d) 5. KHT select small aggregate
 - (a) 6. KHT identify strength requirements
 - (a) 7. KHT determine durability requirements

Performance Step: 3. Determine desired slump.

- Knowledge /Skills:
- (a) 1. KHT identify job specifications
 - (e) 2. KHT/BAT mix a trial batch
 - (h) 3. KHT/BAT charge the slump cone
 - (h) 4. KHT/BAT consolidate the concrete in the slump cone
 - (h) 5. KHT/BAT measure the results during the slump test
 - (h) 6. KHT/BAT evaluate the results of the slump test
 - (h) 7. KHT/BAT determine required slump

Performance Step: 4. Determine percentage of air entrainment, as required.

- Knowledge /Skills:
- (f) 1. HKO air entrained concrete
 - (f) 2. HKO chemical admixtures for air entrainment
 - (b) 3. KHT determine concrete characteristics per specifications

Performance Step: 5. Determine amount of water.

- Knowledge /Skills:
- (j) 1. KHT/BAT measure liquids



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (j) 2. KHT/BAT determine liquid weights
- (a,e) 3. KHT/BAT determine strength requirements
- (e) 4. HKO quality control methods

Performance Step: 6. Determine a water/cement ratio.

- Knowledge /Skills:
- (c) 1. KHT read charts
 - (a) 2. KHT/BAT identify strength requirements
 - (a) 3. KHT/BAT identify water tightness criteria
 - (c) 4. KHT determine amount of water needed
 - (c) 5. KHT determine amount of cement needed
 - (a) 6. KHT/BAT identify durability requirements

Performance Step: 7. Determine amount of cement.

- Knowledge /Skills:
- (b) 1. KHT/BAT determine type of cement
 - (e) 2. KHT/BAT calculate cement required

Performance Step: 8. Determine loose volume of gravel.

- Knowledge /Skills:
- (d) 1. HKO available aggregates
 - (d,e) 2. KHT/BAT read chart(s)
 - (e) 3. KHT/BAT calculate volumes
 - (d) 4. KHT/BAT determine maximum size aggregate
 - (e) 5. KHT/BAT determine Fineness Modulus of fine aggregate (FA)

Performance Step: 9. Convert weights to absolute volumes.

- Knowledge /Skills:
- (e) 1. KHT/BAT convert loose volume of gravel
 - (e) 2. HKO bulk weight of gravel
 - (e) 3. KHT/BAT calculate absolute volume of gravel
 - (e) 4. KHT/BAT calculate absolute volume of cement
 - (e) 5. KHT/BAT calculate absolute volume of water
 - (e) 6. KHT/BAT calculate absolute volume of air

Performance Step: 10. Determine weight of sand.

- Knowledge /Skills:
- (e) 1. HKO weight of selected sand
 - (e) 2. KHT/BAT determine partial volume of cement, gravel, water, and air
 - (e) 3. KHT calculate absolute volume of sand

Performance Step: 11. Determine loose volume of sand.



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- Knowledge /Skills:
- (e) 1. KHT/BAT determine absolute volume of sand
 - (e) 2. HKO bulk unit weight of selected sand
 - (e) 3. KHT/BAT calculate loose volume of sand

Performance Step: 12. List final proportions for a one cubic yard batch.

- Knowledge /Skills:
- (f) 1. HKO weight of bag of cement
 - (e,f) 2. HKO how many cubic ft per cubic yd
 - (e,f) 3. HKO bulk unit weight of sand
 - (e,f) 4. HKO bulk unit weight of gravel
 - (e,f) 5. HKO weight of water per gallon
 - (f) 6. KHT/BAT calculate cement per cubic yard per batch
 - (f) 7. KHT/BAT calculate amount of sand per cubic yard per batch
 - (f) 8. KHT/BAT calculate amount of gravel per cubic yard per batch
 - (f) 9. KHT/BAT calculate amount of water per cubic yard per batch
 - (g) 10. HKO types of mixing equipment
 - (g) 11. KHT/BAT determine mixing batch proportions
 - (g) 12. KHT/BAT determine mixing batch times
 - (del) 13. HKO host nation equipment available
 - (j) 14. KHT/BAT estimate materials

Performance Step: 13. Perform field moisture test on the aggregates.

- Knowledge /Skills:
- (c) 1. HKO water to cement ratio
 - (i) 2. KHT/BAT perform field test on aggregates
 - (i) 3. KHT/BAT calculate FSM
 - (h) 4. KHT/BAT perform a slump test
 - (i) 5. KHT/BAT adjust water due to FSM on fine aggregate
 - (i) 6. KHT/BAT adjust water due to FMS on coarse aggregate

Performance Step: 14. Adjust mix design to account for aggregate moisture.

- Knowledge /Skills:
- (i) 1. KHT/BAT adjust design mixture based on FSM
 - (j) 2. KHT/BAT calculate amount of cement needed for project
 - (j) 3. KHT/BAT calculate amount of water needed after adjustment for project
 - (j) 4. KHT/BAT calculate amount of gravel needed after adjustment for project
 - (j) 5. KHT/BAT calculate amount of sand needed after adjustment for project
 - (a,j) 6. HKO ordering materials

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1002TASK BEHAVIOR: Design concrete structuresDATE OF LEARNING ANALYSIS: 20130903Performance Step: 1. Review the specifications.

- Knowledge /Skills:
- (del) 1. KHT/BAT read blue prints
 - (del) 2. HKO supported commander's intent
 - (del) 3. KHT/BAT design concrete mix
 - (del) 4. KHT/BAT determine site area
 - (a) 5. KHT identify design requirements for footers
 - (a) 6. KHT/BAT identify requirements for concrete slab construction
 - (f) 7. KHT identify requirements for concrete wall construction
 - (g) 8. BAT determine requirements for concrete wall design
 - (h) 9. KHT/BAT identify requirements for CMU block construction

Performance Step: 2. Design a concrete footing.

- Knowledge /Skills:
- (a) 1. HKO types of footers for construction
 - (a) 2. KHT/BAT determine type of footer needed
 - (b,c) 3. KHT/BAT determine compressive strength of footers
 - (a) 4. KHT/BAT determine footer dimensions
 - (a) 5. HKO frost line
 - (d) 6. KHT/BAT determine clear space for reinforcement for footers
 - (d) 7. KHT/BAT determine minimum cover requirements for reinforcement materials
 - (b) 8. KHT/BAT determine requirements for concrete slab
 - (b) 9. KHT/BAT read charts for concrete slab
 - (a) 10. KHT/BAT determine static load for concrete slab
 - (a) 11. KHT/BAT determine allowable flexural strength
 - (b) 12. HKO different classes of floors
 - (b) 13. KHT/BAT determine slab thickness

Performance Step: 3. Design a concrete wall.

- Knowledge /Skills:
- (del) 1. KHT read blue prints
 - (f) 2. HKO available materials



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 3. KHT establish building lines
- (del) 4. KHT square the layout lines
- (del) 5. KHT identify strength requirements
- (del) 6. KHT identify durability requirements
- (del) 7. KHT identify water tightness criteria
- (del) 8. KHT determine coarse aggregate size
- (del) 9. KHT identify when deformed steel bar is required
- (f) 10. KHT determine aggregate size
- (f) 11. KHT determine minimum cover requirements
- (f) 12. KHT determine minimum clear space requirements
- (f) 13. KHT/BAT determine thickness of wall based on mission requirements
- (f) 14. KHT/BAT determine slump requirements
- (g) 15. KHT/BAT estimate amount of concrete required
- (g) 16. KHT determine type of Portland cement required

Performance Step: 4. Design a reinforced concrete structure.

- Knowledge /Skills:
- (del) 1. KHT read blue prints
 - (a,f) 2. KHT identify when deformed steel bar is required
 - (d) 3. KHT identify when welded wire mesh is required
 - (d,f) 4. KHT determine minimum cover requirements
 - (d,f) 5. KHT determine minimum clear space requirements
 - (d,f) 6. KHT determine aggregate size
 - (a,f) 7. KHT determine the bar grade marking system
 - (del) 8. KHT perform engineer reconnaissance
 - (del) 9. KHT identify the uses of Portland cement
 - (del) 10. KHT evaluate terrain
 - (del) 11. HKO concrete accelerators
 - (del) 12. HKO concrete proofing reducers

Performance Step: 5. Design a concrete block structure.

- Knowledge /Skills:
- (del) 1. KHT read blue prints
 - (a) 2. KHT determine footing specifications
 - (h) 3. KHT/BAT identify types of CMU block
 - (h) 4. KHT determine amount of CMU for walls
 - (h) 5. KHT rough in placement of doors



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (h) 6. KHT rough in placement of windows
- (i) 7. HKO lenti/bond beam blocks
- (i) 8. KHT determine CMU reinforcement material
- (j) 9. KHT determine amount of sand required
- (j) 10. KHT determine amount of lime required
- (j) 11. KHT determine amount of Portland cement required
- (j) 12. KHT determine ampount of mortar required
- (h) 13. KHT determine mortar joint spacing
- (h) 14. HKO intersecting walls
- (h,i,j) 15. HKO mortar finishes
- (h) 16. HKO core filling

Performance Step: 6. Prepare construction drawing.

Knowledge /Skills: (TPD) 1. DELETE: Students will calculate materials based off designs

Performance Step: 7. Generate a Bill of Materials for each type of design.

Knowledge /Skills: (del) 1. KHT read blue prints
(a,e,g,j) 2. KHT calculate amount of Portland cement
(j) 3. KHT calculate quantity of block
(a,e,g,j) 4. KHT calculate amount of sand
(a,e) 5. KHT calculate amount of gravel
(e) 6. KHT calculate amount of lime
(d,f,i) 7. KHT calculate amount of reinforcement bar
(e,g) 8. KHT calculate amount of release material required
(d) 9. KHT calculate amount of welded wire mesh required
(k) 10. KHT calculate board feet
(k) 11. KHT/BAT complete a bill of materials for supply ordering
(k) 12. KHT calculate linear feet
(k) 13. KHT calculate fasteners
(k) 14. KHT calculate square footage of sheathing
(k) 15. KHT/BAT complete a materials take-off sheet

Performance Step: 8. Obtain design approval (if required).

Knowledge /Skills: (TPD) 1. DELETE: TPD



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1003TASK BEHAVIOR: Design concrete formsDATE OF LEARNING ANALYSIS: 20130903Performance Step: 1. Analyze the concrete structure design to determine the type of form.

- Knowledge /Skills:
- (del) 1. KHT read blueprints
 - (a) 2. KHT identify types of forms
 - (a) 3. KHT identify form components

Performance Step: 2. Determine bill of materials.

- Knowledge /Skills:
- (del) 1. KHT read blueprints
 - (del) 2. KHT calculate board feet
 - (del) 3. KHT calculate linear feet
 - (del) 4. KHT calculate fasteners
 - (del) 5. KHT calculate square footage of sheathing

Performance Step: 3. Determine the proper spacing for all components of the form.

- Knowledge /Skills:
- (b) 1. KHT determine maximum developed pressures (Pmax)
 - (c) 2. KHT determine stud spacing
 - (c) 3. KHT determine uniform load on a stud
 - (c) 4. KHT determine wale spacing
 - (c) 5. KHT determine uniform load on a wale
 - (c) 6. KHT calculate plan area
 - (c) 7. KHT determine mixer output
 - (b) 8. KHT calculate rate of placement
 - (c) 9. KHT determine tie wire/rod spacing
 - (c) 10. KHT calculate bracing spacing
 - (c) 11. KHT calculate material for bracing

Performance Step: 4. Illustrate final design.

- Knowledge /Skills:
- (del) 1. KHT prepare blueprints
 - (del) 2. KHT employ autocad



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1004

TASK BEHAVIOR: Plan airfield damage repair (ADR Operations)

DATE OF LEARNING ANALYSIS: 20120919

Performance Step: 1. Provide recommendations to the Survival Recovery Staff for the task organization of personnel and equipment.

- Knowledge /Skills:
- (a) 1. KHT determine facility DAT required
 - (a) 2. KHT determine runway DAT composition
 - (a) 3. KHT identify UXO
 - (a) 4. KHT use organic material
 - (a) 5. KHT employ heavy equipment
 - (a) 6. KHT employ the ADR kit
 - (a) 7. BAT identify the components of ADR kit
 - (b) 8. KHT employ NATO marking system
 - (b) 9. KHT/BAT identify spall fields
 - (b) 10. KHT/BAT identify UXO fields
 - (b) 11. KHT/BAT plot MOS based on STANAG grid system
 - (d) 12. BAT identify the components of the ADR kit

Performance Step: 2. Determine the appropriate Foreign Object Debris (FOD) cover requirements.

- Knowledge /Skills:
- (b) 1. KHT determine surface roughness criteria
 - (b) 2. KHT/BAT determine amount of upheaval
 - (b) 3. KHT/BAT square off crater edges
 - (b) 4. KHT use pavemend
 - (b) 5. KHT use quickcrete
 - (b) 6. KHT use redi-pave
 - (b) 7. KHT describe acceptable conditions for AM-2 FOD cover
 - (b) 8. KHT describe favorable conditions for FFP FOD cover
 - (b) 9. KHT employ sand grid
 - (b) 10. KHT employ geo textiles

Performance Step: 3. Calculate the material requirements for crater repair.

- Knowledge /Skills:
- (c) 1. KHT to determine volume of gravel
 - (c) 2. KHT to calculate heavy construction equipment production estimations



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(c) 3. KHT determine appropriate T/E assets for a given type of repair

(c) 4. KHT calculate for bags/buckets of COTS repair materials

Performance Step: 4. Calculate the material requirements for spall repair.

Knowledge /Skills: (del) 1. KHT to determine volume of gravel
 (del) 2. KHT to calculate heavy construction equipment production estimations
 (del) 3. KHT determine appropriate T/E assets for a given type of repair
 (del) 4. KHT calculate for bags/buckets of COTS repair materials

Performance Step: 5. Identify appropriate dispersal areas for equipment, materials, and personnel in the event of follow-on attacks.

Knowledge /Skills: (del) 1. KHT/BAT identify survivability requirements
 (del) 2. KHT/BAT identify survivability position locations

Performance Step: 6. Submit appropriate engineer reports.

Knowledge /Skills: (del) 1. KHT/BAT prepare an engineer estimate
 (del) 2. KHT/BAT prepare engineer forms/reports

Performance Step: 7. Coordinate with supported commander, as required.

Knowledge /Skills: (del) 1. KHT/BAT identify appropriate staff sections
 (del) 2. KHT/BAT submit required reports
 (del) 3. KHT/BAT submit requests

Performance Step: 8. Coordinate logistical support, as required.

Knowledge /Skills: (del) 1. KHT/BAT determine support required
 (del) 2. KHT/BAT identify adjacent engineer support available
 (del) 3. KHT/BAT determine support from host nation available
 (del) 4. KHT/BAT submit logistical support requests to appropriate staff sections

Performance Step: 9. Incorporate safety measures.

Knowledge /Skills: (del) 1. KHT/BAT conduct an operational risk assessment
 (del) 2. KHT/BAT establish controls to mitigate risks

Performance Step: 10. Receive reports from damage assessment teams and damage assessment response teams.

Knowledge /Skills: (del) 1. KHT/BAT establish reporting system
 (del) 2. KHT/BAT analyze damage and assessment reports
 (del) 3. KHT/BAT track damage and assessment reports

Performance Step: 11. Repair critical facilities.



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- Knowledge /Skills: (del) 1. KHT/BAT conduct horizontal construction
(del) 2. KHT/BAT conduct vertical construction
(del) 3. KHT/BAT identify facility repair requirements
(del) 4. KHT/BAT develop a construction schedule

Performance Step: 12. Establish a sustainable facility/ site maintenance and repair plan.

- Knowledge /Skills: (del) 1. HKO AGS functions
(del) 2. KHT/BAT identify commander's priorities
(del) 3. KHT/BAT identify repair priorities
(del) 4. KHT/BAT conduct maintenance inspections
(del) 5. KHT/BAT organize repair crews



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1005

TASK BEHAVIOR: Develop mobile electric power distribution/redistribution plan

DATE OF LEARNING ANALYSIS: 20110817

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills: (a) 1. KHT/BAT identify what facilities need power
(a) 2. KHT/BAT calculate demand load

Performance Step: 2. Integrate utilities SME(s) into planning process.

- Knowledge /Skills: (a) 1. KHT integrate Utility Officers into planning
(a) 2. KHT integrate Utility Chiefs into planning
(a) 3. HKO electrical planning

Performance Step: 3. Conduct site reconnaissance.

- Knowledge /Skills: (b) 1. KHT/BAT establish criteria for generator placement
(b) 2. KHT/BAT select generator sites

Performance Step: 4. Identify existing electrical power sources.

- Knowledge /Skills: (del) 1. KHT/BAT determine support from host nation available
(del) 2. KHT/BAT identify adjacent engineer support available
(del) 3. HKO green technology

Performance Step: 5. Determine electrical power requirements based on personnel, equipment, and facilities.

- Knowledge /Skills: (c) 1. KHT/BAT determine proper mix of MEP equipment based on priorities for power and operational tempo
(c) 2. KHT/BAT determine the hours of operation
(del) 3. KHT/BAT identify facilities that require power
(a) 4. KHT/BAT identify quantity of personnel to be supported

Performance Step: 6. Determine priorities for electric power.

- Knowledge /Skills: (c) 1. KHT select proper generator based on priorities
(del) 2. HKO engineer power priorities during phases of camp design

Performance Step: 7. Determine task organization of personnel and equipment.

- Knowledge /Skills: (d) 1. KHT/BAT identify components of MEPDIST
(d) 2. KHT/BAT identify what 1100 MOSs are required to set up, operate, and maintain MEPDIST system

Date: 20151001

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 8. Develop a distribution diagram.

Knowledge /Skills: (del) 1. KHT/BAT prepare design drawings



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1006

TASK BEHAVIOR: Develop field water distribution system

DATE OF LEARNING ANALYSIS: 20110824

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (a) 2. KHT conduct map reconnaissance
 - (del) 3. KHT/BAT identify additional intelligence required

Performance Step: 2. Integrate utilities SME(s) into planning process.

- Knowledge /Skills:
- (c) 1. KHT integrate utilities personnel into planning
 - (c) 2. HKO utility support personnel

Performance Step: 3. Conduct site reconnaissance.

- Knowledge /Skills:
- (del) 1. BAT conduct map reconnaissance
 - (del) 2. KHT conduct engineer reconnaissance
 - (a) 3. BAT determine spatial requirements
 - (del) 4. KHT conduct water analysis

Performance Step: 4. Identify existing water sources through water point reconnaissance.

- Knowledge /Skills:
- (del) 1. KHT conduct engineer reconnaissance
 - (del) 2. KHT conduct water analysis
 - (del) 3. KHT/BAT conduct a water point report
 - (a) 4. HKO content on DA 1712-R

Performance Step: 5. Determine water consumption (i.e., based on numbers of personnel, equipment, facilities, and climate conditions).

- Knowledge /Skills:
- (e) 1. KHT/BAT calculate number of personnel times 20 gallons of water per day
 - (d) 2. KHT/BAT determine the sanitation requirements

Performance Step: 6. Develop plan for production, purification, storage, and distribution of water.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify site selection considerations for equipment
 - (b) 2. KHT/BAT determine equipment capabilities
 - (c) 3. KHT/BAT determine required additional support equipment
 - (c) 4. KHT/BAT determine quantity of consumables

Performance Step: 7. Plan drainage system to prevent contamination of water source from storm runoff.



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- Knowledge /Skills: (del) 1. KHT/BAT determine drainage requirements
(d) 2. KHT/BAT determine waste water requirements
- Performance Step: 8. Plan construction or improvement main supply routes (MSR) from water point and/or well sites.
- Knowledge /Skills: (del) 1. KHT/BAT plan military road
(del) 2. KHT/BAT plan horizontal construction project
- Performance Step: 9. Determine task organization of equipment and personnel.
- Knowledge /Skills: (c) 1. KHT/BAT determine the number of 1171s and number of working party personnel required for size of plan
(b) 2. KHT/BAT determine amount and type of equipment required based on size of plan
- Performance Step: 10. Develop a distribution diagram.
- Knowledge /Skills: (b,d) 1. KHT/BAT place purification, storage, and distribution points in logical sequence in space provided in plan
- Performance Step: 11. Coordinate with supported commander, as required.
- Knowledge /Skills: (del) 1. KHT/BAT identify appropriate staff sections
(del) 2. KHT/BAT submit required reports
(del) 3. KHT/BAT submit requests
(del) 4. KHT/BAT brief commander on the construction plan
- Performance Step: 12. Coordinate logistical support, as required.
- Knowledge /Skills: (del) 1. KHT/BAT determine support required
(del) 2. KHT/BAT identify adjacent engineer support available
(del) 3. KHT/BAT determine support from host nation available
(del) 4. KHT/BAT submit logistical support requests to appropriate staff sections



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1007

TASK BEHAVIOR: Arrange external support for engineer projects/operations

DATE OF LEARNING ANALYSIS: 20121009

Performance Step: 1. Review the operations order.

Knowledge /Skills: (del) 1. KHT/BAT conduct a METT-T analysis

Performance Step: 2. Identify tasks/missions beyond organic capabilities.

Knowledge /Skills: (del) 1. KHT/BAT conduct a METT-T analysis
(a) 2. KHT/BAT identify engineer unit capabilities
(a) 3. KHT/BAT identify engineer unit structure
(c) 4. BAT identify engineer unit Mission Essential Tasks (METs)
(c) 5. BAT identify engineer unit mission

Performance Step: 3. Determine sources of support.

Knowledge /Skills: (a) 1. KHT/BAT identify specific engineer unit capabilities by MAGTF element (i.e. Division, Wing, MLG, NCF)
(a) 2. KHT/BAT identify engineer support from other services (Army/Airforce)
(a) 3. KHT/BAT identify Host Nation engineer support
(a) 4. BAT identify engineer units in the MAGTF

Performance Step: 4. Coordinate with supporting elements to provide required support.

Knowledge /Skills: (e) 1. KHT/BAT determine support required for engineer planning
(a) 2. KHT/BAT identify adjacent engineer support available
(a) 3. KHT/BAT determine support from host nation available
(d) 4. KHT/BAT submit logistical support requests to appropriate staff sections
(b) 5. KHT/BAT determine support required for obstacle construction
(g) 6. KHT/BAT determine support required cantonment construction
(f) 7. KHT/BAT determine support required for gap crossing operations



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1008TASK BEHAVIOR: Conduct range operationsDATE OF LEARNING ANALYSIS: 20120416Performance Step: 1. Plan for training.

- Knowledge /Skills:
- (del) 1. KHT/BAT develop a training plan
 - (del) 2. KHT/BAT develop a training schedule
 - (del) 3. KHT/BAT identify tasks to train to
 - (del) 4. KHT/BAT manage unit training (MUT) 1302-ADMN-1001

Performance Step: 2. Conduct site reconnaissance, if required.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct a map study
 - (del) 2. KHT/BAT evaluate terrain (conduct site survey)
 - (a,b) 3. KHT/BAT identify restrictions
 - (a,b) 4. KHT/BAT possible terrain effects on SDZ

Performance Step: 3. Build target folder(s), if required.

- Knowledge /Skills:
- (del) 1. KHT/BAT determine what type of Class V is to be utilized
 - (a) 2. KHT/BAT determine range limits allowed (max. pounds)
 - (c) 3. KHT/BAT select appropriate targets to accomplish individual or collective training event goals
 - (c) 4. KHT/BAT select appropriate charges to accomplish individual or collective training event goals
 - (del) 5. KHT/BAT employ military explosives
 - (del) 6. KHT/BAT estimate explosive materials required
 - (del) 7. KHT/BAT estimate construction materials required
 - (c) 8. KHT/BAT identify individual shots to be executed
 - (c) 9. KHT/BAT organize individual shots in a logical sequence to facilitate efficient training

Performance Step: 4. Submit logistical support requirements.

- Knowledge /Skills:
- (del) 1. KHT/BAT calculate explosive charges
 - (del) 2. KHT/BAT estimate construction material
 - (del) 3. KHT/BAT determine support required
 - (del) 4. KHT.BAT identify transportation requirements



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 5. KHT/BAT submit logistical support requests to appropriate staff sections
- (del) 6. KHT/BAT submit requests
- (del) 7. KHT/BAT complete a Training Support Request (TSR)

Performance Step: 5. Calculate Class V requirements.

- Knowledge /Skills:
- (del) 1. KHT/BAT calculate explosive charges
 - (del) 2. KHT/BAT calculate Class V munitions

Performance Step: 6. Review SDZs/range regulations, if required.

- Knowledge /Skills:
- (a) 1. HKO existing range regulations, if available (training at an established facility)
 - (b) 2. KHT/BAT develop range regulations, if required (establishing a training facility)
 - (b) 3. KHT determine max allowable poundage
 - (b) 4. KHT mark off the range
 - (b) 5. KHT identify detonation points
 - (b) 6. KHT establish SDZs (Surface Danger Zones)
 - (b) 7. KHT establish offsets
 - (d) 8. KHT establish comm procedures
 - (b) 9. KHT establish check fire procedures
 - (del) 10. KHT handle misfires
 - (del) 11. KHT coordinate with subordinate/adjacent/higher units
 - (d) 12. KHT establish a T/O for range operations
 - (d) 13. KHT identify equipment required to conduct range operations (to include safety equipment)

Performance Step: 7. Conduct training.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct an Operational Risk Assessment (ORA)
 - (b) 2. KHT/BAT establish cease training criteria
 - (del) 3. KHT identify hazards associated with military explosives
 - (del) 4. KHT mitigate hazards associated with military explosives
 - (del) 5. KHT follow established procedures
 - (del) 6. KHT supervise
 - (d) 7. KHT set-up issue procedures
 - (del) 8. KHT employ military explosives
 - (del) 9. KHT check charge calculations



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 10. KHT inspect charge for proper construction
- (del) 11. KHT check charges for proper employment
- (del) 12. BAT supervise detonation of shots

Performance Step: 8. Submit required reports.

Knowledge /Skills: . No Knowledge/Skills have been entered for this Performance Step

Performance Step: 9. Conduct accountability of personnel, weapons, and equipment.

Knowledge /Skills: . No Knowledge/Skills have been entered for this Performance Step

Performance Step: 10. Repair/restore range, as required.

Knowledge /Skills: . No Knowledge/Skills have been entered for this Performance Step

Performance Step: 11. Direct lineout.

Knowledge /Skills: . No Knowledge/Skills have been entered for this Performance Step



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-EOPS-1009

TASK BEHAVIOR: Establish project/operation schedules

DATE OF LEARNING ANALYSIS: 20130410

Performance Step: 1. Review the mission.

- Knowledge /Skills:
- (a) 1. KHT analyze a construction directive
 - (del) 2. BAT identify equipment needed
 - (b) 3. KHT conduct preliminary planning
 - (a) 4. KHT develop checklists for site reconnaissance
 - (del) 5. KHT conduct site reconnaissance
 - (del) 6. HKO the Theater Construction Management System (TCMS)
 - (del) 7. HKO the Microsoft Project Management software

Performance Step: 2. Determine activities/tasks necessary to complete the project.

- Knowledge /Skills:
- (b) 1. KHT brainstorm
 - (a) 2. HKO project construction sequence of events/steps

Performance Step: 3. Arrange activities/tasks in logical sequence.

- Knowledge /Skills:
- (b) 1. KHT construct an IPB list
 - (b) 2. KHT develop a logic diagram

Performance Step: 4. Complete activity estimate sheets.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify project number
 - (b) 2. KHT/BAT identify activity number
 - (c) 3. KHT/BAT write thorough activity description
 - (del) 4. KHT/BAT calculate materials take off
 - (c) 5. KHT/BAT calculate equipment and manpower

Performance Step: 5. Identify critical tasks.

- Knowledge /Skills:
- (d) 1. KHT calculate float
 - (d) 2. KHT conduct time analysis
 - (d) 3. KHT identify critical path

Performance Step: 6. Graphically depict schedule.

- Knowledge /Skills:
- (b) 1. KHT transfer IPB to logic diagram
 - (d) 2. KHT calculate time analysis



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (d) 3. KHT calculate float
- (d) 4. KHT identify critical path
- (c) 5. BAT identify resources needed
- (c) 6. KHT sum resources
- (e) 7. KHT transfer information from logic diagram to early start schedule form

Performance Step: 7. Update schedule throughout duration of project/operation.

- Knowledge /Skills:
- (f) 1. KHT make adjustments to work rates on activity sheets
 - (f) 2. KHT make adjustments to resources on activity sheets
 - (e) 3. KHT perform resource constraining
 - (e) 4. KHT perform resource leveling

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-FUEL-1001TASK BEHAVIOR: Plan fuel operationsDATE OF LEARNING ANALYSIS: 20120815Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (del) 2. KHT/BAT identify additional intelligence required
 - (del) 3. KHT/BAT identify the S-2
 - (del) 5. KHT/BAT determine reconnaissance requirements

Performance Step: 2. Integrate Bulk Fuel SME(s) into planning process.

- Knowledge /Skills:
- (a) 1. KHT integrate bulk fuel personnel into planning

Performance Step: 3. Plan reconnaissance of selected sites.

- Knowledge /Skills:
- (c) 1. KHT/BAT identify the requirements for a fuel operations site
 - (cel) 2. KHT/BAT conduct a reconnaissance

Performance Step: 4. Determine the fuel shortage requirements.

- Knowledge /Skills:
- (del) 1. KHT/BAT calculate quantities of fuel required
 - (b) 2. KHT/BAT identify equipment and methods used to store fuel required

Performance Step: 5. Determine distribution requirements.

- Knowledge /Skills:
- (b) 1. KHT/BAT identify methods and equipment used to distribute fuel required
 - (del) 2. KHT/BAT identify equipment and vehicles that will require fuel support
 - (b) 3. KHT/BAT calculate quantities of fuel required

Performance Step: 6. Identify existing fuel sources and host nation support availability.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify service organizations or units which procure, receive, store, transport, and distribute fuel
 - (a) 2. KHT/BAT identify the mission, equipment, and capabilities of units identified by previous knowledge/skill
 - (del) 3. BAT list available fuel sources

Performance Step: 7. Coordinate with appropriate services with the delivery of fuel.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify units which procure, receive, store, transport, and distribute fuel
 - (del) 2. KHT/BAT identify requirements for fuel and equipment



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 3. KHT/BAT submit requirements to the appropriate staff sections (S-3, S-4) for sourcing/staffing with external agencies or higher headquarters

Performance Step: 8. Select sites for fuel farms.

- Knowledge /Skills: (del) 1. KHT/BAT identify the number and capacities of fuel farm sites required
(c) 2. KHT/BAT identify requirements of fuel farm sites
(c) 3. KHT/BAT identify operational and environmental factors which affect optimal orientation of each type of bulk fuel system

Performance Step: 9. Plan horizontal construction operations.

- Knowledge /Skills: (del) 1. KHT/BAT identify equipment, personnel, and logistical support required to conduct horizontal construction operations
(c) 2. KHT/BAT identify design criteria for fuel containment berms

Performance Step: 10. Determine task organization of equipment and personnel.

- Knowledge /Skills: (d) 1. KHT/BAT identify equipment/materials required to prepare fuel sites
(d) 2. KHT/BAT identify personnel required to install, operate, and retrograde bulk fuel systems
(del) 3. KHT/BAT identify fuel requirements
(del) 4. KHT/BAT identify types and quantities of bulk fuel systems needed to handle amounts of fuel required

Performance Step: 11. Illustrate the layout of the fuel farm.

- Knowledge /Skills: (c) 1. KHT/BAT identify optimal configuration and minimum spacing requirements for each type of bulk fuel system
(del) 2. KHT/BAT draw a scaled sketch

Performance Step: 12. Illustrate fuel distribution plan.

- Knowledge /Skills: (del) 1. KHT/BAT draw a graphic, scaled depiction with any amplifying information of the fuel distribution plan

Performance Step: 13. Develop record(s) for fuel distribution.

- Knowledge /Skills: (e) 1. KHT/BAT identify forms used to monitor receipt and distribution of fuels during fuel operations
(e) 2. KHT/BAT complete forms used during fuel operations

Performance Step: 14. Plan/coordinate firefighting support.

- Knowledge /Skills: (c) 1. KHT/BAT identify fire fighting equipment
(c) 2. KHT/BAT position fire fighting equipment
(c) 3. KHT/BAT establish fire fighting teams



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 4. KHT/BAT conduct an operational risk assessment
- (del) 5. KHT/BAT establish controls to mitigate risks

Performance Step: 15. Develop spill contingency plan.

- Knowledge /Skills:
- (del) 1. HKO host nation hazardous material handling requirements
 - (del) 2. HKO unit SOP for spills

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-HORZ-1001TASK BEHAVIOR: Plan a horizontal construction projectDATE OF LEARNING ANALYSIS: 20130906Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT read blueprints for construction project
 - (a,b) 2. KHT analyze tasks to be performed
 - (del) 3. KHT/BAT analyze METT-T
 - (del) 4. KHT/BAT identify additional intelligence required
 - (a,b) 5. KHT/BAT identify the S-2
 - (a) 6. KHT/BAT submit RFIs
 - (del) 7. KHT/BAT determine reconnaissance requirements
 - (a) 8. HKO supported unit commander's intent for mobility requirements.
 - (a) 9. HKO supported unit commander's intent for countermobility requirements
 - (b) 10. HKO supported unit commander's intent for survivability position/area requirements
 - (a,b) 11. KHT determine constraints for mission
 - (a,b) 12. KHT/BAT conduct courses of action

Performance Step: 2. Conduct site reconnaissance.

- Knowledge /Skills:
- (a,b) 1. KHT conduct map recon
 - (del) 2. HKO commander's intent
 - (a,b) 3. HKO weather impacting requirements
 - (a,b) 4. HKO terrain impacting requirements
 - (a) 5. HKO routes impacting requirements
 - (a,b) 6. HKO existing obstacles

Performance Step: 3. Perform hasty field identification of soils.

- Knowledge /Skills:
- (del) 1. KHT obtain soil sample
 - (del) 2. KHT/BAT select appropriate tools
 - (del) 3. KHT/BAT identify required mechanical stabilization equipment
 - (del) 4. KHT/BAT select an appropriate soil stabilization technique
 - (del) 5. KHT/BAT determine amount of stabilizing admixture required
 - (del) 6. KHT/BAT determine compaction effort required



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 4. Determine drainage requirements.

Knowledge /Skills: (del) 1. DELETE: Covered in event 1302-HORZ-1002

Performance Step: 5. Select appropriate configuration.

Knowledge /Skills: (del) 1. KHT/BAT determine the number of landing points in an LZ
 (del) 2. KHT/BAT identify types of FOBs
 (b) 3. HKO enemy threat weapons
 (a) 4. HKO enemy vehicles
 (a,b) 5. HKO enemy capabilities
 (a,b) 6. BAT determine construction plan based on priority

Performance Step: 6. Determine matting requirements, if applicable.

Knowledge /Skills: (del) 1. DELETE: Covered in 1302-EOPS-1004

Performance Step: 7. Calculate earthwork production estimations.

Knowledge /Skills: (c) 1. KHT/BAT differentiate between in-place, loose and compacted soil
 (del) 2. KHT/BAT solve mathematical equations
 (f) 3. KHT/BAT calculate bulldozer production
 (d) 4. KHT/BAT calculate scraper production
 (h) 5. KHT/BAT calculate scoop loader production
 (j) 6. KHT/BAT calculate grader production
 (i) 7. KHT/BAT calculate backhoe production
 (k) 8. KHT/BAT calculate compactor production
 (e) 9. KHT/BAT calculate dump truck production
 (del) 10. KHT/BAT determine volume
 (g) 11. KHT/BAT calculate for tree clearing operations
 (del) 12. KHT/BAT compute earthwork volumes

Performance Step: 8. Determine logistical requirements.

Knowledge /Skills: (a,b) 1. KHT analyze the specifications called for in the construction directive
 (del) 2. KHT calculate board feet
 (del) 3. KHT calculate linear feet
 (del) 4. KHT calculate fasteners
 (del) 5. KHT/BAT select equipment for land clearing operations
 (del) 6. KHT/BAT solve mathematical equations



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 9. Employ construction management tool.

Knowledge /Skills: (del) 1. DELETE: Taught in Construction Management (Task 1302-EOPS-1009 Establish project/operation schedules)

Performance Step: 10. Establish quality control plan.

Knowledge /Skills: (del) 1. HKO quality control methods
 (del) 2. HKO quality control equipment
 (del) 3. BAT follow accepted construction techniques
 (a,b) 4. KHT identify job specifications

Performance Step: 11. Develop maintenance/repair plan.

Knowledge /Skills: (del) 1. KHT/BAT handle "unique conditions" maintenance problems (i.e., snow, ice, frost, etc.)

Performance Step: 12. Issue the order.

Knowledge /Skills: (a,b) 1. KHT/BAT identify an operations order
 (del) 2. KHT/BAT create an operations order
 (del) 3. KHT/BAT develop a mission statement
 (a,b) 4. KHT/BAT develop a concept of operations
 (a,b) 5. KHT identify requirements
 (a,b) 6. KHT summarize resource requirements
 (a,b) 7. KHT determine general priorities
 (a,b) 8. KHT allocate engineer forces
 (a,b) 9. KHT allocate engineer equipment

Performance Step: 13. Coordinate as required with supported commander.

Knowledge /Skills: (a,b) 1. KHT/BAT identify appropriate staff sections
 (a,b) 2. KHT/BAT submit required reports
 (a,b) 3. KHT/BAT submit requests
 (a,b) 4. KHT/BAT brief commander on the construction plan

Performance Step: 14. Coordinate logistical support, as required.

Knowledge /Skills: (a,b) 1. KHT/BAT determine support required
 (a,b) 2. KHT/BAT identify adjacent engineer support available
 (a,b) 3. KHT/BAT determine support from host nation available
 (a,b) 4. KHT/BAT submit logistical support requests to appropriate staff sections



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 15. Coordinate security, as required.

- Knowledge /Skills:
- (a,b) 1. KHT/BAT identify security requirements
 - (a,b) 2. KHT/BAT submit requests for support as required

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-HORZ-1002TASK BEHAVIOR: Plan construction of drainage systemsDATE OF LEARNING ANALYSIS: 20130906Performance Step: 1. Analyze the mission.

- Knowledge /Skills:
- (del) 1. KHT read blueprints
 - (del) 2. KHT determine aggregate size
 - (b) 3. KHT/BAT calculate area of waterway using hasty method
 - (a) 4. KHT/BAT calculate area of waterway using field estimate method

Performance Step: 2. Review drainage specifications.

- Knowledge /Skills:
- (del) 1. KHT/BAT read blueprints
 - (del) 2. KHT/BAT analyze construction directives
 - (d) 3. KHT/BAT determine numer of pipes required
 - (c) 4. KHT/BAT determine size of pipes
 - (e) 5. KHT/BAT determine type of culvert required

Performance Step: 3. Review the terrain.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct map reconnaissance
 - (del) 2. KHT/BAT conduct engineer reconnaissance of area
 - (del) 3. BAT identify water flow
 - (del) 4. BAT identify stream flow

Performance Step: 4. Calculate area of waterway/peak run off.

- Knowledge /Skills:
- (a) 1. KHT/BAT calculate acreage
 - (a) 2. KHT/BAT calculate slopes
 - (a) 3. KHT/BAT determine run-off coefficients
 - (a) 4. KHT/BAT determine rainfall intensities

Performance Step: 5. Determine type of drainage structure(s) required.

- Knowledge /Skills:
- (e) 1. HKO triangular ditches
 - (e) 2. HKO trapazodial ditches
 - (e) 3. HKO manufactured culverts types
 - (e) 4. HKO constructed culvert types
 - (f) 5. HKO check dams



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (e) 6. HKO relief ditches
- (e,f) 7. HKO headwalls
- (f) 8. HKO revetment materials

Performance Step: 6. Calculate size/amount of culvert required (if applicable).

- Knowledge /Skills:
- (c) 1. KHT/BAT calculate linear footage
 - (c) 2. KHT/BAT calculate Dmax
 - (c) 3. KHT/BAT calculate Ades

Performance Step: 7. Design a drainage ditch.

- Knowledge /Skills:
- (a) 1. KHT/BAT determine slope of area
 - (a) 2. KHT/BAT determine rainfall intensity
 - (a) 3. KHT/BAT determine run-off co-efficeincies
 - (a) 4. KHT/BAT calculate acreage
 - (del) 5. KHT/BAT analyze terrain
 - (e) 6. KHT/BAT determine ditch type based on Aw

Performance Step: 8. Determine logistical requirements needed.

- Knowledge /Skills:
- (del) 1. HKO logistical transport systems
 - (del) 2. HKO earthmoving equipment capabilities

Performance Step: 9. Complete a bill of materials (if required).

- Knowledge /Skills:
- (del) 1. DELETE: Performance step is covered during Vertical Construction class

Performance Step: 10. Submit required reports.

- Knowledge /Skills:
- (del) 1. DELETE: Performance step covered in Engineer Planning class



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-HORZ-1003

TASK BEHAVIOR: Conduct a field soil analysis

DATE OF LEARNING ANALYSIS: 20130909

Performance Step: 1. Obtain a soil sample.

- Knowledge /Skills:
- (b) 1. HKO tools required to obtain sample
 - (d) 2. KHT/BAT determine type of soil needed
 - (a) 3. KHT/BAT determine location to test

Performance Step: 2. Perform a visual examination of the soil.

- Knowledge /Skills:
- (a) 1. BAT identify the maximum size aggregate (MSA)
 - (a) 2. BAT identify organic material
 - (a) 3. BAT identify visual characteristics
 - (a) 4. KHT/BAT inspect/QR sample

Performance Step: 3. Separate gravel.

- Knowledge /Skills:
- (a) 1. BAT use appropriate sieve
 - (a) 2. HKO soils test set
 - (c) 3. KHT/BAT estimate percentage of gravel by volume
 - (c) 4. KHT/BAT estimate percentage of gravel by weight

Performance Step: 4. Conduct field identification tests on the -40 material.

- Knowledge /Skills:
- (c) 1. BAT separate sand and fines
 - (a) 2. BAT use appropriate sieve

Performance Step: 5. Determine the USCS classification.

- Knowledge /Skills:
- (a) 1. KHT/BAT conduct bite test
 - (a) 2. KHT/BAT conduct thread test
 - (a) 3. KHT/BAT conduct feel test
 - (a) 4. KHT/BAT conduct dry strength test
 - (a) 5. KHT/BAT conduct shine test
 - (a) 6. KHT/BAT conduct ribbon test
 - (a) 7. KHT/BAT conduct wet shake test
 - (a) 8. KHT/BAT conduct hand wash test
 - (d) 9. KHT/BAT determine OMC



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(e) 10. KHT/BAT utilize the Unified Soils Classification System

Performance Step: 6. Determine the CBR.

- Knowledge /Skills:
- (b) 1. BAT assemble DM-DCP per TM manual
 - (b) 2. KHT/BAT manually calculate CBR for in-situ soil using DM-DCP
 - (b) 3. KHT/BAT assemble DM-DCP with mag ruler
 - (b) 4. KHT/BAT program mag ruler
 - (b) 5. KHT/BAT determine CBR for in-situ soil using DM-DCP with mag ruler
 - (b) 6. KHT/BAT print results using mag ruler printer
 - (f) 7. HKO soil stabilization methods
 - (f) 8. KHT determine what type of soil stabilization method is needed

Performance Step: 7. Determine the moisture content.

- Knowledge /Skills:
- (b) 1. KHT/BAT employ the speedy moisture tester
 - (b) 2. KHT/BAT employ electronic moisture probe
 - (d) 3. KHT/BAT determine OMC

Performance Step: 8. Record and report results.

- Knowledge /Skills:
- (del) 1. KHT/BAT record results
 - (del) 2. KHT/BAT report results



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MANT-1001TASK BEHAVIOR: Manage a Consolidated Memorandum Receipt (CMR)DATE OF LEARNING ANALYSIS: 20131114

Performance Step: 1. Receive assignment letter from Commanding Officer as Responsible Officer for CMR account.

Knowledge /Skills: (del) 1. DELETE: TPD

Performance Step: 2. Receive CMR from Supply Officer.

Knowledge /Skills: (del) 1. BAT locate Supply Officer

Performance Step: 3. Inventory gear/materiel annotated on the CMR.

Knowledge /Skills:

- (a) 1. KHT/BAT identify a CMR
- (a) 2. BAT read a CMR
- (del) 3. BAT identify gear/material listed on CMR
- (a) 4. BAT verify serial numbers on gear/materiel to ensure the match serial numbers on the CMR
- (a) 5. BAT verify NSNs on gear/materiel to ensure the match NSNs on the CMR
- (a) 6. BAT verify quantity on-hand to ensure it matches the quantity listed on the CMR
- (a) 7. KHT/BAT annotate discrepancies on the CMR as required
- (b) 8. KHT/BAT submit discrepancy letter as required

Performance Step: 4. Compile discrepancies and submit a request for investigation/discrepancy letter, if applicable.

Knowledge /Skills:

- (a) 1. KHT/BAT annotate discrepancies on CMR as required
- (b) 2. KHT/BAT submit discrepancy letter as required
- (del) 3. HKO unit maintenance management SOP
- (del) 4. BAT write naval correspondence

Performance Step: 5. Subcustody gear/material to responsible individual(s), if applicable.

Knowledge /Skills: (del) 1. DELETE: Performance step not applicable at FLC

Performance Step: 6. Conduct quarterly reconciliation with Supply Officer; Initial, sign and date CMR.

Knowledge /Skills:

- (del) 1. HKO unit maintenance management SOP
- (a) 2. BAT conduct inventories as required
- (del) 3. KHT/BAT coordinate with unit supply section



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(del) 4. KHT/BAT submit discrepancy letter as required

Performance Step: 7. Provide delegation of authority to receive/turn-in gear to Supply.

Knowledge /Skills: (del) 1. HKO unit maintenance management SOP
(del) 2. BAT write naval correspondence
(del) 3. BAT develop assignment letters as required
(d) 4. BAT establish a tracking system for records and forms

Performance Step: 8. Maintain documentation of reconciliation and sub-custody for personal reference.

Knowledge /Skills: (d) 1. BAT establish a tracking system for records and forms
(c) 2. HKO establishing a Memorandum of Record/ECR
(d) 3. HKO 1348 MAT

Performance Step: 9. Maintain records of receipt and disposal.

Knowledge /Skills: (d) 1. BAT establish a tracking system for records and forms
(del) 2. HKO unit maintenance management SOP



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MANT-1002TASK BEHAVIOR: Manage an organizational maintenance programDATE OF LEARNING ANALYSIS: 20140717Performance Step: 1. Ensure proper manuals and forms are available.

- Knowledge /Skills:
- (b) 1. HKO the Publications Library Management System (PLMS)
 - (b) 2. HKO the Marine Corps Publication Distribution System (MCDS)
 - (b) 3. KHT maintain a publications library
 - (b,d,e) 4. HKO applicable maintenance forms/documents

Performance Step: 2. Ensure required maintenance is performed and documented.

- Knowledge /Skills:
- (del) 1. KHT supervise
 - (e) 2. KHT track paperwork dealing with equipment in maintenance cycle
 - (del) 3. KHT establish an internal equipment inspection program
 - (e) 4. KHT update equipment record jackets
 - (e) 5. KHT maintain equipment record jackets
 - (g) 6. KHT manage a calibration program
 - (h) 7. KHT establish a pre-expended bin (PEB) system
 - (a) 8. HKO two levels of maintenance
 - (a) 9. HKO echelons of maintenance
 - (a) 10. HKO principle elements of maintenance management
 - (e,f) 11. HKO maintenance acronyms/terminology

Performance Step: 3. Review reports for discrepancies within the maintenance and supply cycle.

- Knowledge /Skills:
- (e) 1. Know what a Maintenance Production Report (MPR) is
 - (f) 2. KHT identify defect codes
 - (f) 3. KHT identify job status codes
 - (f) 4. KHT identify operational codes
 - (f) 5. KHT identify maintenance priority codes
 - (e) 6. KHT identify reportable end items
 - (e) 7. KHT identify non-reportable end items
 - (e,f) 8. KHT/BAT review the status of parts
 - (i) 9. KHT submit a supply discrepancy report
 - (e) 10. HKO preventive maintenance checks and services (PMCS) reports



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (g) 11. HKO calibration reports
- (e) 12. HKO corrective maintenance (CM) reports
- (e) 13. HKO modification instruction (MI) reports
- (e,f) 14. KHT read a Mechanized Allowance List (MAL) report from the GCSS-MC Install Base

Performance Step: 4. Review reports transaction for processing errors.

- Knowledge /Skills:
- (c) 1. HKO latest GPN publications
 - (c) 2. KHT read GCSS-MC generated Maintenance Production Report (MPR)
 - (d) 3. HKO the purpose of a Service Request (SR)
 - (c) 4. HKO the Universal Work Que (UWQ)
 - (b) 5. HKO recent maintenance publications
 - (d) 6. KHT read a Service Request (SR)
 - (e) 7. KHT read a GCSS-MC generated modifications report
 - (e) 8. KHT read a GCSS-MC generated Preventive Maintenance (PM) report
 - (e) 9. KHT read a GCSS-MC generated Calibrations Report (CR)
 - (c) 10. HKO the GCSS-MC generated Mechanized Allowance List (MAL) report
 - (c) 11. KHT read a GCSS-MC generated Mechanized Allowance List (MAL) report
 - (i) 12. HKO frequency to review maintenance reports
 - (e) 13. HKO GCSS-MC generated reports
 - (i) 14. HKO Discoverer User Report(s) in GCSS-MC

Performance Step: 5. Inspect reports for compliance with references.

- Knowledge /Skills:
- (c) 1. HKO latest GCSS-MC references
 - (b) 2. HKO current maintenance management publications
 - (b,c) 3. HKO latest GCSS-MC GPN publications
 - (e,f) 4. KHT read records/reports generated from GCSS-MC
 - (del) 5. KHT to supervise
 - (e) 6. KHT track paperwork
 - (del) 7. KHT establish an internal inspection program
 - (e) 8. KHT update record jackets
 - (e) 9. KHT maintain record jackets
 - (g) 10. KHT manage a calibration program
 - (h) 11. KHT establish a pre-expended bin system



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 6. Review supply parts requisitions to identify any discrepancies.

Knowledge /Skills: (del) 1. Delete: covered in performance step #5 and #7

Performance Step: 7. Conduct reconciliation with MMO and supply.

Knowledge /Skills: (f) 1. KHT review reports for discrepancies within the maintenance cycle
(del) 2. KHT ensure proper manuals and forms are available
(del) 3. KHT follow local SOPs
(c) 4. KHT state the purpose of a Mechanized Allowance List (MAL)
(del) 5. KHT use references
(i) 6. KHT use an ESR
(f) 7. KHT review reports for discrepancies within the supply cycle
(i) 8. KHT submit a Record of Discrepancy (ROD) report
(i) 9. KHT submit a supply reconciliation report
(b) 10. HKO reportable end items
(b) 11. HKO non-reportable end items
(e,f) 12. HKO supply status codes
(i) 13. KHT report deficient items
(i) 14. KHT report excess items
(c,h,i) 15. HKO special allowances



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1001

TASK BEHAVIOR: Plan a military road

DATE OF LEARNING ANALYSIS: 20130909

Performance Step: 1. Conduct reconnaissance of proposed road.

- Knowledge /Skills:
- (del) 1. KHT employ aerial reconnaissance
 - (del) 2. KHT conduct ground reconnaissance
 - (del) 3. KHT fill out engineer reconnaissance forms
 - (del) 4. KHT estimate grades
 - (del) 5. KHT estimate amount of clearing required
 - (del) 6. KHT identify soil type
 - (del) 7. KHT evaluate streams at crossing sites
 - (del) 8. KHT calculate stream velocity
 - (del) 9. KHT locate indigenous construction material
 - (del) 10. KHT locate pertinent weather data
 - (del) 11. KHT evaluate topography
 - (b) 12. KHT locate long tangents
 - (a) 13. KHT evaluate obstacles (rivers, steep grades)
 - (a) 14. KHT evaluate possible bridge approaches
 - (del) 15. KHT evaluate tactical requirements
 - (del) 16. KHT conduct engineer reconnaissance
 - (b) 17. KHT evaluate tactical considerations when designing a road
 - (c) 18. KHT determine design life of the road is to support mission requirements
 - (c) 19. KHT identify road types
 - (c) 20. KHT identify road classes

Performance Step: 2. Determine number and type of vehicles that will use the road.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify types of vehicles
 - (a) 2. KHT/BAT determine hourly volume of traffic
 - (a) 3. KHT/BAT determine requirements from construction directive
 - (a) 4. KHT determine average daily traffic (ADR)

Performance Step: 3. Recommend road design and requirements to commander.

- Knowledge /Skills:
- (b) 1. KHT/BAT site road course



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (b) 2. KHT/BAT recognize geometric obstacles in road design
- (c) 3. HKO distribution of loads
- (c) 4. HKO the function of the sub grade
- (c) 5. HKO the function of the base course
- (del) 6. HKO the principles of compaction
- (a) 7. KHT/BNAT employ road class selection criteria
- (a) 8. KHT/BAT select road design index
- (del) 9. KHT/BAT determine drainage requirements
- (del) 10. KHT/BAT determine stabilization required

Performance Step: 4. Determine logistics requirements to support construction.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify required mechanical stabilization equipment
 - (del) 2. KHT/BAT calculate Class IV material requirements
 - (del) 3. KHT/BAT calculate POL requirements
 - (del) 4. KHT/BAT identify personnel requirements
 - (del) 5. KHT/BAT develop an equipment maintenance plan
 - (del) 6. KHT/BAT calculate earthwork requirements
 - (d) 7. KHT/BAT develop road maintenance repair plan
 - (del) 8. KHT/BAT establish quality control plan

Performance Step: 5. Prepare operations order to construct pioneer road.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify an operations order
 - (del) 2. KHT/BAT create an operations order
 - (del) 3. KHT/BAT develop a mission statement
 - (del) 4. KHT/BAT develop a concept of operations

Performance Step: 6. Coordinate with supported unit.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify appropriate staff sections
 - (del) 2. KHT/BAT submit required reports
 - (del) 3. KHT/BAT submit requests
 - (del) 4. KHT/BAT brief commander on the construction plan

Performance Step: 7. Coordinate logistical support, as required.

- Knowledge /Skills:
- (del) 1. KHT/BAT determine support required
 - (del) 2. KHT/BAT identify adjacent engineer support available
 - (del) 3. KHT/BAT determine support from host nation available



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(del) 4. KHT/BAT submit logistical support requests to appropriate staff sections

Performance Step: 8. Coordinate security, as required.

Knowledge /Skills: (b) 1. KHT/BAT identify security requirements

(del) 2. KHT/BAT submit requests for support as required

Performance Step: 9. Ensure safety measures are observed.

Knowledge /Skills: (del) 1. KHT/BAT conduct an operational risk assessment

(del) 2. KHT/BAT establish controls to mitigate risks



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1002

TASK BEHAVIOR: Plan dismounted route sweep operations

DATE OF LEARNING ANALYSIS: 20120822

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (b) 1. BAT conduct METT-T analysis
 - (b) 2. BAT conduct map study
 - (b) 3. BAT determine friendly mobility requirements
 - (b) 4. KHT identify key terrain

Performance Step: 2. Determine the most likely areas to be mined, booby-trapped or have improvised explosive devices.

- Knowledge /Skills:
- (b) 1. BAT identify areas based on know threat doctrine
 - (b) 2. BAT identify areas based on know threat SOP
 - (b) 3. KHT identify key terrain

Performance Step: 3. Identify common signs and markings that may be associated with the location of mines, IEDs, and booby traps.

- Knowledge /Skills:
- (b) 1. KHT identify international warning signs
 - (b) 2. KHT correlate movement of indigenous people with possible location of explosive hazards
 - (b) 3. KHT identify explosive hazard dunnage
 - (b) 4. KHT identify disturbed earth
 - (b) 5. KHT identify misplaced objects
 - (b) 6. KHT identify anomalies in the environment

Performance Step: 4. Determine type and extent of mines/obstacles/IEDs.

- Knowledge /Skills:
- (a) 1. KHT identify explosive hazards

Performance Step: 5. Determine task organization of personnel and equipment.

- Knowledge /Skills:
- (c) 1. KHT identify types of teams
 - (d) 2. KHT identify specific equipment required for each team
 - (e) 3. KHT use the minefield marking kit
 - (e) 4. KHT use a handheld detector
 - (e) 5. KHT use a mine probe

Performance Step: 6. Determine material requirements.



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- Knowledge /Skills: (e) 1. KHT use explosive hazard detecting equipment
(e) 2. KHT use the minefield marking kit
(f) 3. KHT use military demolitions

Performance Step: 7. Determine Explosive Ordnance Disposal (EOD) support.

- Knowledge /Skills: (del) 1. BAT determine capabilities of unit if a mine/booby trap cannot be removed or must be inerted by EOD
(del) 2. BAT utilize EH decision matrix
(del) 3. BAT determine mission priority (mobility/intelligence)
(del) 4. BAT determine EOD support available

Performance Step: 8. Develop route sweep order.

- Knowledge /Skills: (del) 1. KHT write a 5 paragraph order

Performance Step: 9. Plan mission rehearsals.

- Knowledge /Skills: (del) 1. DELETE: TPD Taught at TBS



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1003TASK BEHAVIOR: Plan Route and Area Clearance (RAAC) operationsDATE OF LEARNING ANALYSIS: 20130911Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- | | |
|-----------------|---|
| (del) | 1. BAT conduct a METT-T analysis |
| (d,e,f,g,h,i) | 2. HKO engineer equipment operations |
| (d) | 3. HKO route sweep operations |
| (d) | 4. HKO complex obstacle breaching |
| (a,d) | 5. HKO identification of Explosive Hazards (EH) |
| (d) | 6. HKO EH reduction |
| (d) | 7. HKO non-explosive obstacle reduction |
| (d) | 8. HKO destruction of Captured Enemy Ammunition (CEA) |
| (d) | 9. HKO operation of a robot |
| (del) | 10. BAT coordinate with external engineer support |
| (d) | 11. HKO demolition operations |
| (j) | 12. HKO concept of operations |
| (j) | 13. HKO scheme of maneuver |

Performance Step: 2. Develop a RAAC operation order.

- Knowledge /Skills:
- | | |
|---------|---|
| (del) | 1. BAT develop an engineer estimate of supportability |
| (del) | 2. BAT create modified combined obstacle overlay |
| (del) | 3. BAT develop engineer concept of operations |
| (del) | 4. BAT develop engineer appendix |
| (del) | 5. BAT determine engineer mission requirements |
| (del) | 6. BAT analyze METT-T |

Performance Step: 3. Ensure employment concept is consistent with the tactical situation and scheme of maneuver.

- Knowledge /Skills:
- | | |
|---------|---|
| (del) | 1. BAT analyze METT-T |
| (del) | 2. BAT analyze the threat |
| (del) | 3. BAT determine threat courses of action |
| (del) | 4. BAT analyze Commander Intent |
| (b,c) | 5. BAT task organize engineer assets to support the mission |



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 6. BAT submit required reports
- (del) 7. BAT identify the commanders priorities to be supported in the concept of operations
- (del) 8. BAT identify resources available on the battlefield
- (del) 9. KHT/BAT identify significant features on the battle space
- (del) 10. KHT/BAT brief commander
- (del) 11. KHT/BAT determine support required
- (del) 12. BAT describe the impact of engineer operation
- (b,c,k) 13. BAT allocate personnel and equipment to accomplish the mission

Performance Step: 4. Plan rehearsals and Immediate Action (IA) drills.

- Knowledge /Skills:
- (del) 1. HKO engineer capabilities and organizations
 - (d,l) 2. KHT employ tactical formations
 - (d) 3. BAT plan immediate actions for mobility operations

Performance Step: 5. Ensure all obstacles are detected, identified and marked.

- Knowledge /Skills:
- (e,i) 1. HKO detection assets
 - (l) 2. KHT/BAT employ marking assets
 - (a) 3. KHT/BAT identify Explosive Hazards (EH)
 - (l) 4. KHT/BAT utilize references on munitions (i.e. ORDATA II, country handbooks, etc...)
 - (k) 5. HKO sweep techniques
 - (f) 6. BAT identify IED-D tenants framework
 - (j) 7. BAT identify the phases of route and area clearance
 - (f,g) 8. HKO handheld detection assets
 - (f,g) 9. KHT employ mine detector teams
 - (f) 10. KHT/BAT use a mine detector
 - (g) 11. KHT/BAT use a metal detector
 - (f) 12. KHT/BAT calibrate a mine detector
 - (g) 13. KHT/BAT calibrate a metal detector

Performance Step: 6. Plan for the reduction or bypass of obstacle.

- Knowledge /Skills:
- (del) 1. KHT identify key terrain
 - (del) 2. HKO threat doctrine
 - (del) 3. HKO threat SOP
 - (del) 4. BAT determine friendly mobility requirements



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 5. BAT construct a MCOO (Modified Combined Obstacle Overlay)
- (j) 6. KHT identify possible bypasses
- (del) 7. BAT develop an engineer estimate of supportability
- (j) 8. BAT recommend a course of action
- (del) 9. KHT/BAT identify appropriate staff sections
- (j) 10. KHT/BAT submit required reports

Performance Step: 7. Issue order.

- Knowledge /Skills:
- (del) 1. BAT develop engineer concept of operations
 - (del) 2. BAT create an overlay



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1004

TASK BEHAVIOR: Conduct mobility operations in an Improvised Explosive Device (IED) environment

DATE OF LEARNING ANALYSIS: 20130911

Performance Step: 1. Conduct mission analysis.

Knowledge /Skills: (del) 1. DELETE: Covered in Engineer Planning

Performance Step: 2. Plan immediate actions for mobility operation.

Knowledge /Skills: (b) 1. BAT identify relevant go/no go criteria for mobility operations in an IED environment
(c) 2. BAT identify actions during halts
(c) 3. BAT describe 5, 25, and 200-250 meter searches
(c) 4. BAT describe the 5 "C's"
(del) 5. BAT identify actions of route sweep elements

Performance Step: 3. Conduct immediate actions.

Knowledge /Skills: (del) 1. HKO engineer capabilities and organizations
(c) 2. KHT employ tactical formations
(del) 3. KHT coordinate for direct and indirect fire support

Performance Step: 4. Conduct breaching actions.

Knowledge /Skills: (del) 1. KHT/BAT identify a bypass
(del) 2. KHT/BAT reduce an obstacle
(del) 3. KHT/BAT identify different proofing means
(del) 4. KHT/BAT describe bulling through

Performance Step: 5. Submit required reports.

Knowledge /Skills: (del) 1. BAT complete a situation report
(del) 2. BAT complete a progress report
(d) 3. BAT complete a EH incident report
(del) 4. BAT complete a spot report
(del) 5. BAT conduct post-operation procedures
(del) 6. BAT complete an obstacle report
(d) 7. BAT complete and route status report
(d) 8. BAT complete an IED nine line



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1005

TASK BEHAVIOR: Plan breaching of a complex obstacle

DATE OF LEARNING ANALYSIS: 20120214

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (e) 1. BAT conduct METT-T analysis
 - (e) 2. BAT conduct map study
 - (e) 3. BAT identify key terrain (Potential IED areas)
 - (e) 4. BAT interface with EOD for latest enemy TTPs
 - (e) 5. BAT determine friendly mobility requirements
 - (e) 6. BAT identify potential bypasses
 - (e) 7. BAT identify existing obstacles
 - (e) 8. BAT identify decision points and named areas of interest
 - (e) 9. BAT construct a MCOO (Modified Combined Obstacle Overlay)

Performance Step: 2. Identify available bypasses.

- Knowledge /Skills:
- (a) 1. KHT identify possible bypasses
 - (a) 2. KHT define a bypass
 - (del) 3. KHT perform engineer recon

Performance Step: 3. Identify the type(s) of breaching operation required.

- Knowledge /Skills:
- (a) 1. HKO breaching doctrine
 - (a) 2. KHT define the types of breaches
 - (a) 3. KHT define bypass operations
 - (a) 4. KHT define hasty breaches
 - (a) 5. KHT define in-stride breaches
 - (a) 6. KHT define deliberate breaches
 - (a) 7. KHT define assault breaches
 - (a) 8. KHT define covert/ clandestine breaches

Performance Step: 4. Identify number of lanes required.

- Knowledge /Skills: . No Knowledge/Skills have been entered for this Performance Step

Performance Step: 5. Identify potential breach sites.

- Knowledge /Skills: (del) 1. HKO barrier plans



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 2. HKO obstacle plans
- (b) 3. KHT interpret obstacle intelligence (obstintel)
- (b) 4. HKO threat capabilities
- (del) 5. HKO obstacle construction
- (a) 6. BAT identify friendly mobility requirements

Performance Step: 6. Determine number/type of explosive/nonexplosive breaching assets available.

- Knowledge /Skills:
- (c) 1. KHT employ military demolitions for breaching
 - (c) 2. KHT employ APOBS (Anti-personnel Obstacle Breaching System)
 - (c) 3. KHT employ line charge
 - (d) 4. KHT employ an MC-1150, a D-7, D-8 or bigger bulldozer
 - (d) 5. KHT employ the ACE
 - (d) 6. KHT employ the tank width mine plow
 - (d) 7. KHT employ the mine roller
 - (d) 8. KHT employ the mine rake
 - (d) 9. KHT employ the AVLB
 - (d) 10. KHT employ AMMAD
 - (d) 11. KHT employ fascines
 - (c) 12. KHT employ the SMAW weapon system
 - (d) 13. BAT identify non-explosive breaching assets
 - (i) 14. BAT employ the SMAW
 - (g) 15. BAT employ the APOBS
 - (h) 16. BAT employ a MCLIC
 - (del) 17. KHT/BAT employ a bangalore
 - (c,f) 18. KHT/BAT plan employment of ABV

Performance Step: 7. Task organize engineer personnel and equipment within the breach force.

- Knowledge /Skills:
- (a) 1. KHT identify breaching organization
 - (a) 2. KHT explain breaching fundamentals

Performance Step: 8. Determine proper sequencing of the breach force based on tactical situation.

- Knowledge /Skills:
- (del) 1. KHT employ tactical formations
 - (a) 2. KHT explain breaching fundamentals
 - (a) 3. KHT explain the approach
 - (a) 4. KHT explain deploy



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(a) 5. KHT explain reduce

(a) 6. KHT explain assault

Performance Step: 9. Develop battle drills (individual/unit) to rehearse the breach of a complex obstacle.

Knowledge /Skills: (del) 1. HKO standard operating procedures (SOP)

(del) 2. KHT follow SOP

(f) 3. KHT rehearse and prepare unit to execute SOP

Performance Step: 10. Determine support requirements.

Knowledge /Skills: (del) 1. KHT calculate explosives

(del) 2. KHT compute earthwork volumes

(del) 3. KHT replenish Class V

(e) 4. HKO compatibility of explosive breaching assets and towing vehicles

(e) 5. KHT coordinate security to ensure safety of breach team

(e) 6. HKO requirement for suppression and obscuration during breaching operations

(e) 7. KHT mark report and disseminate breach lanes

(a) 8. HKO reconciliation after breach

Performance Step: 11. Plan, prioritize, and recommend fire support requirement.

Knowledge /Skills: (del) 1. KHT call for fire

(e) 2. KHT coordinate for direct and indirect fire support

(e) 3. HKO supporting arms capabilities

(e) 4. BAT integrate breach plan with the maneuver unit

(e) 5. HKO breach execution checklists

Performance Step: 12. Prepare appendix of the operations order.

Knowledge /Skills: (del) 1. BAT analyze METT-T

(del) 2. BAT conduct engineer IPB

(del) 3. BAT determine engineer mission requirements

(del) 4. BAT develop an engineer concept of operations

(del) 5. BAT develop an engineer appendix

Performance Step: 13. Coordinate actions of support force and assault force before, during, and after, planned breaches.

Knowledge /Skills: (del) 1. KHT/BAT identify appropriate staff sections

(del) 2. KHT/BAT determine support required



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (e) 3. BAT determine availability of supporting fires
- (e) 4. KHT/BAT recommend location of fires
- (del) 5. KHT/BAT submit required reports

Performance Step: 14. Coordinate rehearsals with breach, support, and assault forces.

Knowledge /Skills: (del) 1. DELETE: TPD

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1006TASK BEHAVIOR: Conduct assault breaching into buildingsDATE OF LEARNING ANALYSIS: 20110517Performance Step: 1. Review the mission and reconnaissance reports.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct engineer planning
 - (a) 2. KHT describe the characteristics of "frame" construction
 - (a) 3. KHT describe the characteristics of "frameless" construction
 - (a) 4. BAT describe the characteristics of "frame" construction
 - (a) 5. BAT describe the characteristics of "frameless" construction
 - (a) 6. KHT/BAT identify the type of structure
 - (a) 7. KHT/BAT identify materials/components for exterior walls
 - (a) 8. KHT/BAT identify materials/components for interior walls and partitions
 - (a) 9. KHT/BAT identify materials/components for floors
 - (a) 10. KHT/BAT identify materials/components for roofs
 - (a) 11. KHT identify construction methods for Western Europe
 - (a) 12. KHT identify construction methods for Middle East
 - (a) 13. KHT identify construction methods for Central and South America
 - (a) 14. KHT identify construction methods for the Far East (Asia)
 - (a) 15. KHT/BAT explain construction standards
 - (a) 16. KHT/BAT explain construction codes
 - (a) 17. KHT/BAT select a target breach site
 - (a) 18. KHT/BAT analyze the target breach site
 - (a) 19. KHT/BAT determine target (building) location
 - (k) 20. KHT/BAT compile all necessary information in a breacher's logbook
 - (del) 21. KHT/BAT write
 - (e,f,g) 22. KHT/BAT identify materials needed for specific targets
 - (k) 23. KHT/BAT identify demolitions by DODICs
 - (b) 24. KHT/BAT determine the Net Explosive Weight (NEW)
 - (del) 25. KHT/BAT identify the priming system

Performance Step: 2. Organize the breaching team.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify breach requirements



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (e,f,j) 2. KHT/BAT identify redundant means of accomplishing breach
- (d-j) 3. KHT/BAT determine personnel required to accomplish breach requirements
- (del) 4. KHT/BAT task organize personnel available

Performance Step: 3. Identify the location of the target.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze intelligence materials
 - (del) 2. KHT/BAT read a map
 - (del) 3. KHT/BAT conduct METT-T analysis

Performance Step: 4. Evaluate the target and surrounding areas.

- Knowledge /Skills:
- (d) 1. KHT/BAT identify the effects of terrain and weather on the operation
 - (a) 2. KHT/BAT identify types of doors
 - (a) 3. KHT/BAT identify types of windows
 - (a) 4. KHT/BAT identify types of walls
 - (a) 5. KHT/BAT identify types of roofs
 - (a) 6. KHT/BAT identify types of miscellaneous structures (i.e. fences, locks, etc...)
 - (a) 7. KHT/BAT identify structure components
 - (a) 8. KHT/BAT identify possible breach points

Performance Step: 5. Determine breaching method.

- Knowledge /Skills:
- (d) 1. HKO breaching methods

Performance Step: 6. Select and construct appropriate explosives.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify the most effective placement of the charge at the breach site
 - (f) 2. KHT/BAT identify explosives needed to construct the charge
 - (a) 3. KHT/BAT identify target construction material
 - (c) 4. KHT/BAT identify the functions of the charge
 - (c,d) 5. KHT/BAT explain the effects the charge will have on the target
 - (del) 6. KHT/BAT determine the type of firing systems available
 - (g) 7. KHT/BAT select material to affix the charge to the target
 - (f,g) 8. KHT/BAT select material needed to construct the charge
 - (c,d) 9. KHT/BAT identify the effects of specific charge
 - (g) 10. KHT/BAT identify improper charge construction
 - (b) 11. KHT/BAT determine NEW



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (f,g) 12. KHT/BAT list materials needed for target
- (k) 13. KHT/BAT sketch charge configuration
- (d) 14. KHT/BAT write a breacher's brief
- (k) 15. KHT/BAT draw placement of charges
- (k) 16. KHT/BAT complete pre-mission entries in a breacher's logbook
- (del) 17. KHT/BAT tie standard demo knots as required
- (g) 18. KHT/BAT use treble hooks or nails as required
- (del) 19. KHT/BAT use electrical or waterproof tape as required
- (g) 20. KHT/BAT use surgical tubing or rubber bands as required
- (del) 21. KHT/BAT construct a det cord priming loop as required
- (del) 22. KHT/BAT construct a dual priming system as required
- (del) 23. KHT/BAT place det cord strips to material as required
- (del) 24. KHT/BAT use duct tape as required
- (del) 25. KHT/BAT construct a priming system

Performance Step: 7. Determine possible effects of detonation on the target and surrounding structures.

- Knowledge /Skills:
- (c) 1. KHT/BAT identify the functions of the charge
 - (c) 2. KHT/BAT explain the effect the charge will have on a target
 - (c) 3. KHT/BAT explain how the target surface will react to detonation
 - (c,d) 4. KHT/BAT identify the effects of spatial constraints have on/after detonation
 - (c,d) 5. KHT/BAT identify possible collateral damage
 - (c,d) 6. KHT/BAT identify explosive effects and safe locations

Performance Step: 8. Determine possible effects on the assault team.

- Knowledge /Skills:
- (c) 1. KHT/BAT identify effects of a specific charge
 - (c) 2. KHT/BAT identify what a specific charge will do to a specific target surface
 - (d) 3. KHT/BAT explain protective measures taken for a given blast
 - (c) 4. KHT/BAT identify causes of fragmentation injuries
 - (c) 5. KHT/BAT identify causes of heat injuries
 - (c) 6. KHT/BAT identify causes of respiratory injuries
 - (c) 7. KHT/BAT identify anatomical thresholds
 - (d) 8. KHT/BAT determine possible injuries for a given charge
 - (d) 9. KHT/BAT minimize the possibility of structural collapse (crush injuries)



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (d) 10. KHT identify characteristics of personal protective equipment (PPE)
- (d) 11. KHT/BAT select proper personal protective equipment (PPE) based on type of charge and tactical situation
- (d) 12. KHT determine what constitutes a "safe location"

Performance Step: 9. Identify safety precautions required during detonation.

- Knowledge /Skills:
- (d) 1. KHT determine what constitutes a "safe location"
 - (c,d) 2. KHT/BAT explain charge placement on target to minimize/reduce missile hazards
 - (d) 3. KHT explain proper positioning of individuals
 - (d) 4. BAT properly position individuals
 - (d) 5. KHT determine the minimum number of personnel required to be in the immediate vicinity of the detonation
 - (d) 6. BAT utilize the minimum number of personnel during the breach
 - (c) 7. KHT/BAT identify what constitutes an effective barrier from the blast
 - (d) 8. BAT effectively employ barriers during the breach

Performance Step: 10. Compute Net Explosive Weight (NEW).

- Knowledge /Skills:
- (b) 1. KHT/BAT define Net Explosive Weight (NEW)
 - (b) 2. KHT/BAT convert lbs to grains
 - (b) 3. KHT/BAT utilize conversion chart
 - (b) 4. KHT/BAT utilize relative effective factor (REF) to convert TNT equivalent
 - (b) 5. KHT/BAT locate explosive weight in grains using references
 - (b) 6. KHT/BAT use formula to convert grams to pounds
 - (b) 7. KHT/BAT identify "grain weight" of explosives
 - (b) 8. KHT/BAT convert grains to grams

Performance Step: 11. Determine standoff distance.

- Knowledge /Skills:
- (b,d) 1. KHT/BAT use the NEW to derive stand-off distances
 - (b,d) 2. KHT/BAT determine safe standoff for a window charge
 - (b,d) 3. KHT/BAT determine safe standoff for an oval charge
 - (b,d) 4. KHT/BAT determine safe standoff for a concrete charge
 - (b,d) 5. KHT/BAT determine safe standoff for a det cord linear charge
 - (b,d) 6. KHT/BAT determine safe standoff for a fence charge
 - (b,d) 7. KHT/BAT determine safe standoff for a water charge
 - (b,d) 8. KHT/BAT determine safe standoff for a Uli-knot slider charge



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 12. Brief team members on explosive effects and safe locations.

- Knowledge /Skills:
- (b) 1. KHT/BAT compute the NEW
 - (b,d) 2. KHT/BAT utilize NEW in stand-off calculations
 - (del) 3. KHT/BAT perform mathematical equations
 - (d) 4. KHT/BAT identify protective effects of cover
 - (d) 5. KHT/BAT identify protective effects of personal protective equipment (PPE)
 - (d) 6. KHT/BAT adjust stand-off distances based on available cover
 - (d) 7. KHT/BAT adjust stand-off distances based on available personal protective equipment (PPE)
 - (c,d) 8. KHT/BAT identify the effects of specific charge
 - (d) 9. KHT/BAT identify causes of fragmentation injuries
 - (d) 10. KHT/BAT identify causes of heat injuries
 - (d) 11. KHT/BAT identify causes of respiratory injuries
 - (d) 12. KHT/BAT identify anatomical thresholds
 - (d) 13. KHT/BAT determine possible injuries for a given charge
 - (d) 14. KHT/BAT minimize the possibility of structural collapse (crush injuries)
 - (d) 15. KHT/BAT deliver a deliberate breacher's brief
 - (d) 16. KHT/BAT deliver a hasty breacher's brief

Performance Step: 13. Position yourself and your team in a safe location during detonation.

- Knowledge /Skills:
- (d) 1. KHT explain proper positioning of individuals
 - (d) 2. BAT properly position individuals
 - (d) 3. KHT determine the minimum number of personnel required to be in the immediate vicinity of the detonation
 - (d) 4. BAT utilize the minimum number of personnel during the breach
 - (d) 5. KHT/BAT identify what constitutes an effective barrier from the blast
 - (d) 6. BAT effectively employ barriers during the breach
 - (d) 7. KHT/BAT adjust stand-off distances based on available cover
 - (d) 8. KHT/BAT adjust stand-off distances based on available personal protective equipment (PPE)

Performance Step: 14. Suppress enemy fire and set up security.

- Knowledge /Skills:
- (del) 1. KHT/BAT employ breaching fundamentals

Performance Step: 15. Obscure target from enemy observation.



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Knowledge /Skills: (del) 1. KHT/BAT employ breaching fundamentals

Performance Step: 16. Emplace the charge.

Knowledge /Skills: (h) 1. KHT/BAT position the charge on the target material
 (h) 2. KHT/BAT attach the charge to the target
 (h) 3. KHT/BAT prime the charge
 (j) 4. HKO breaching SOP
 (j) 5. BAT visually inspect breach points
 (j) 6. HKO possible enemy location inside

Performance Step: 17. Detonate the charge.

Knowledge /Skills: (h) 1. KHT/BAT initiate explosive using a firing device
 (k) 2. KHT/BAT conduct a ballistic breach as required
 (j) 3. BAT select appropriate rounds for breaching method
 (j) 4. BAT load magazine tube of weapon
 (j) 5. BAT place weapon into Condition 1
 (j) 6. BAT select proper round for breach
 (j) 7. HKO breaching SOP
 (j) 8. BAT determine standoff for breach
 (j) 9. BAT visually inspect breach points
 (j) 10. HKO component construction to be breached
 (k) 11. BAT locate hinges of a door to be breached
 (k) 12. BAT locate locksets of a door to be breached
 (k) 13. BAT position the muzzle properly
 (j) 14. BAT determine proper standoff from target points
 (j) 15. HKO possible enemy location inside
 (j) 16. BAT engage hinges in "weak" side position
 (j) 17. BAT engage hinges in "strong" side position
 (j) 18. BAT perform immediate action in "weak" side position when engaging hinges
 (j) 19. BAT perform immediate action in "strong" side position when engaging hinges
 (k) 20. BAT perform immediate action in "weak" side position when engaging locksets
 (k) 21. BAT perform immediate action in "strong" side position when engaging locksets



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (j) 22. BAT conduct remedial actions for weapons malfunction
- (j) 23. BAT reload weapon from "weak" side position
- (j) 24. BAT reload weapon from "strong" side position
- (i) 25. KHT/BAT maintain the shotgun
- (i) 26. BAT safely handle the shotgun
- (i) 27. HKO weapon safeties
- (i) 28. BAT place the shotgun into Condition 4
- (i) 29. BAT disassemble the shotgun
- (i) 30. BAT identify components of the shotgun
- (i) 31. BAT identify cleaning materials
- (i) 32. BAT clean the shotgun
- (i) 33. BAT identify unserviceable components
- (i) 34. BAT assemble the shotgun
- (i) 35. BAT perform a function check on the shotgun
- (i) 36. BAT unload and show clear
- (k) 37. KHT/BAT perform weapons handling procedures with the shotgun
- (k) 38. BAT demonstrate proper weapons carries
- (k) 39. BAT demonstrate the tactical carry
- (i) 40. BAT state the characteristics of the shotgun
- (i) 41. BAT described the components of the shotgun
- (i) 42. BAT state the four safety rules in handling weapons
- (i) 43. BAT carry the shotgun in the "ready" position
- (i) 44. BAT demonstrate proper weapons storage and handling
- (i) 45. BAT insert rounds into shotgun
- (i) 46. BAT place the shotgun into Condition 1
- (i) 47. BAT reload shotgun while in Condition 1
- (i) 48. BAT place shotgun into Condition 3
- (i) 49. BAT place weapon into Condition 4
- (i) 50. BAT conduct a dry reload
- (i) 51. HKO shotgun safety procedures
- (k) 52. BAT perform immediate action procedures
- (k) 53. BAT perform remedial action procedures for stoppage
- (i) 54. BAT unload weapon
- (i) 55. BAT place weapon on safe



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (i) 56. KHT/BAT engage stationary targets with the shotgun
- (i) 57. BAT dry cycle the weapon
- (i) 58. BAT physically inspect the breach of the weapon
- (i) 59. BAT select appropriate rounds
- (i) 60. BAT put weapon selector on safe
- (j) 61. BAT insert rounds into weapon
- (j) 62. BAT load a round into the breach of the weapon
- (j) 63. BAT place weapon into Condition 1
- (j) 64. BAT place safety selector switch to "fire"
- (j) 65. BAT sight in the weapon to the target
- (k) 66. BAT engage targets with the shotgun
- (j) 67. BAT cycle the weapon with rounds inserted
- (j) 68. BAT clear the weapon
- (j) 69. BAT place the weapon into Condition 4
- (j) 70. BAT determine effectiveness of round on target
- (j) 71. KHT/BAT perform select shot drills with the shotgun
- (j) 72. BAT assume the Ready Carry
- (j) 73. BAT fill the magazine tube with three rounds
- (j) 74. BAT engage paper targets while conducting magazine tube not fully filled procedures
- (j) 75. BAT fill the magazine tube completely
- (j) 76. BAT fill the magazine tube with one final round
- () 77. BAT engage paper targets while conducting magazine tube fully filled procedures

Performance Step: 18. Employ mechanical breaching as required.

- Knowledge /Skills:
- (f) 1. HKO assault breacher kit equipment
 - (i) 2. KHT/BAT mechanically breach through door
 - (i) 3. KHT/BAT mechanically breach through a window
 - (i) 4. KHT/BAT mechanically breach as follow on to explosive breaching

Performance Step: 19. Proof breach site.

- Knowledge /Skills:
- (del) 1. KHT/BAT employ breaching fundamentals
 - (e) 2. BAT select proper tool to follow-on a partial breach
 - (e) 3. KHT/BAT employ the hooligan breaching tool



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (e) 4. KHT/BAT employ tools to effectively breach a partially breached target

Performance Step: 20. Ensure adequacy of breach.

- Knowledge /Skills: (e) 1. BAT select proper tool to follow-on a partial breach
(e) 2. KHT/BAT employ tools to effectively breach a partially breached target
(1) 3. KHT/BAT complete post-mission entries in a breacher's logbook
(1) 4. KHT/BAT place modifications to charge for future use
(1) 5. KHT/BAT list corrective actions for future use
(1) 6. KHT/BAT report in logbook successful breaches

Performance Step: 21. Pass assault force through the breach site.

- Knowledge /Skills: (del) 1. KHT/BAT employ breaching fundamentals



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1007TASK BEHAVIOR: Plan the reduction of strongpoints and structuresDATE OF LEARNING ANALYSIS: 20120718Performance Step: 1. Review the mission and reconnaissance reports.

- Knowledge /Skills:
- (d) 1. KHT/BAT complete engineer recon forms and reports
 - (del) 2. KHT/BAT analyze METT-T
 - (a) 3. KHT/BAT identify critical info requirements of the obstacle
 - (del) 4. KHT/BAT identify critical info requirements for the terrain
 - (d) 5. KHT/BAT task organize personnel and equipment to perform engineer reconnaissance

Performance Step: 2. Organize demolition team.

- Knowledge /Skills:
- (d) 1. KHT/BAT describe the impact of T/O and T/E
 - (d) 2. BAT recommend the appropriate uses for Engineer T/O and T/E
 - (d) 3. KHT/BAT task organize personnel and equipment to perform a deliberate breach
 - (c) 4. KHT/BAT calculate amounts of demolition needed to reduce strong points

Performance Step: 3. Identify location of target.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify sites for suppression of the enemy
 - (a) 2. KHT/BAT identify positions

Performance Step: 4. Evaluate the target and surrounding areas.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify sites for suppression of the enemy
 - (a) 2. KHT/BAT recommend how to obscure the reduction site
 - (a) 3. KHT/BAT identify security positions
 - (a) 4. KHT/BAT identify resupply positions
 - (a) 5. KHT/BAT identify avenues of approach
 - (a,c) 6. KHT/BAT identify critical info requirements of the terrain

Performance Step: 5. Select and/or construct appropriate means of reduction.

- Knowledge /Skills:
- (c) 1. KHT/BAT calculate safe distance from detonation
 - (c) 2. KHT/BAT calculate a charge
 - (del) 3. KHT/BAT prime a charge
 - (a) 4. KHT/BAT select placement of charge



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 6. Determine possible effects of reduction on target and surrounding structures.

- Knowledge /Skills: (b) 1. KHT/BAT calculate material shielding
(b) 2. KHT/BAT perform hardening techniques
(b) 3. KHT/BAT assess structures/materials

Performance Step: 7. Determine possible effects on the assault team and friendly forces.

- Knowledge /Skills: (b) 1. KHT/BAT identify factors for premature detonation
(b) 2. KHT/BAT describe explosive characteristics

Performance Step: 8. Identify safety precautions required during reduction.

- Knowledge /Skills: (del) 1. KHT/BAT identify critical info requirements of the terrain for safe locations
(del) 2. HKO military explosives
(del) 3. HKO misfire procedures
(del) 4. BAT conduct an Operations Risk Assessment

Performance Step: 9. Brief team members on safe locations.

- Knowledge /Skills: (del) 1. KHT/BAT identify critical info requirements of the terrain for safe locations
(del) 2. HKO explosive theory
(del) 3. HKO protective measures

Performance Step: 10. Position yourself and your team in a safe location during reduction.

- Knowledge /Skills: (a,c) 1. KHT/BAT identify critical info requirements of the terrain for safe locations
(b) 2. BAT apply protective measures

Performance Step: 11. Suppress enemy fire and setup site security.

- Knowledge /Skills: (del) 1. HKO breaching fundamentals

Performance Step: 12. Obscure target from enemy observation.

- Knowledge /Skills: (del) 1. HKO breaching fundamentals

Performance Step: 13. Mark areas for safe transit/ occupation by friendly forces.

- Knowledge /Skills: (del) 1. HKO breaching fundamentals

Performance Step: 14. Reduce strongpoint/structure.

- Knowledge /Skills: (del) 1. KHT/BAT employ military explosives as required
(del) 2. KHT/BAT employ engineer equipment as required



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 3. KHT/BAT task engineer personnel as required
- (del) 4. HKO breaching fundamentals
- (del) 5. KHT/BAT plan for complex obstacle breaching
- (del) 6. KHT/BAT plan for demolition operations
- (del) 7. BAT conduct mobility operations

Performance Step: 15. Coordinate transfer of control of reduction site to follow-on/ designated force.

Knowledge /Skills: (del) 1. KHT coordinate with subordinate/adjacent/higher units

Performance Step: 16. Submit required reports.

- Knowledge /Skills:
- (del) 1. BAT develop an engineer appendix
 - (del) 2. KHT/BAT recommend location of fires
 - (del) 3. BAT develop an engineer concept of operations
 - (del) 4. KHT/BAT submit required reports
 - (del) 5. KHT/BAT depict required elements on a military overlay



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1008TASK BEHAVIOR: Operate a robotDATE OF LEARNING ANALYSIS: 20120410Performance Step: 1. Visually assess the terrain.

- Knowledge /Skills:
- (e) 1. KHT/BAT determine the best avenue of approach egress for robot
 - (e) 2. KHT/BAT determine primary /alternate operating positions
 - (d) 3. KHT/BAT identify ditches
 - (d) 4. KHT/BAT identify adverse slopes
 - (d) 5. KHT/BAT identify and protruding objects for minimum ground clearance
 - (d) 6. KHT/BAT identify communication dead areas
 - (d) 7. KHT/BAT identify potential signal interference
 - (d) 8. KHT/BAT identify potential water hazards
 - (d) 9. KHT/BAT identify potential hazards for robot
 - (d) 10. KHT/BAT identify restrictive/constrictive terrain
 - (d) 11. KHT/BAT identify man-made structures

Performance Step: 2. Prepare the robot for operation.

- Knowledge /Skills:
- (a) 1. KHT/BAT account for all components and SL-3 equipment
 - (b) 2. KHT/BAT remove robot from transport vehicle
 - (b) 3. KHT/BAT inspect robot components for serviceability
 - (b) 4. KHT/BAT identify batteries for robot and OCU
 - (b) 5. KHT/BAT inspect battery charge for operation
 - (b) 6. KHT/BAT install batteries
 - (b) 7. KHT/BAT install antennas on OCU
 - (b) 8. KHT/BAT turn on OCU
 - (b) 9. KHT/BAT ensure connectivity between OCU and robot
 - (b) 10. KHT/BAT function check the robot
 - (b) 11. KHT/BAT perform pre-operations checks
 - (b) 12. KHT/BAT check speaker/microphone (if applicable)
 - (b) 13. KHT/BAT check on-board lighting
 - (b) 14. KHT/BAT check the camera for operation (zoom/pan)
 - (b) 15. KHT/BAT raise/lower arm(s) of robot



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (b) 16. KHT/BAT check tracks for mobility
- (b) 17. KHT/BAT check gripper function(s)
- (b) 18. KHT/BAT check firing device(s)
- (b) 19. KHT/BAT check fiber optic wire

Performance Step: 3. Operate the robot and components.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify operational capabilities
 - (g) 2. KHT/BAT perform pre-set functions
 - (c) 3. KHT/BAT manipulate track controls
 - (c) 4. KHT/BAT manipulate arm controls
 - (c) 5. KHT/BAT operate gripper
 - (c) 6. KHT/BAT manipulate camera controls
 - (c) 7. KHT/BAT operate speaker/microphone (if applicable)
 - (c) 8. KHT/BAT operate robot forward/reverse
 - (c) 9. KHT/BAT perform left/right turn
 - (d) 10. KHT/BAT operate robot in urban terrain conditions
 - (c) 11. KHT/BAT operate robot in different speed modes
 - (d) 12. KHT/BAT operate robot in adverse weather conditions
 - (d) 13. KHT/BAT operate robot in limited light conditions using on-board lighting
 - (d) 14. KHT/BAT operate robot remotely by cameras
 - (f) 15. KHT/BAT perform immediate actions for loss of operation
 - (d) 16. KHT/BAT operate robot in heavy vegetation
 - (d) 17. KHT/BAT operate robot to navigate up and down stairs
 - (d) 18. KHT/BAT operate robot while transporting objects
 - (d) 19. KHT/BAT grip objects with robot
 - (f) 20. KHT/BAT place objects with gripper
 - (g) 21. KHT/BAT apply operator remedial actions
 - (c) 22. KHT/BAT displace objects with robot
 - (c) 23. KHT/BAT operate robotic attachments

Performance Step: 4. Conduct robotic reconnaissance.

- Knowledge /Skills:
- (a) 1. KHT/BAT set-up robot for reconnaissance operations
 - (del) 2. KHT/BAT identify potential explosive hazards (EH)
 - (c) 3. KHT/BAT interrogate objects
 - (d) 4. KHT/BAT recon culverts for suspected objects



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- (d) 5. KHT/BAT recon urban structures for suspected objects
- (d) 6. KHT/BAT recon vehicles for suspected objects
- (d) 7. KHT/BAT recon subterranean structures
- (d) 8. KHT/BAT investigate using camera systems
- (c) 9. KHT/BAT manipulate attachments for interrogation

Performance Step: 5. Retrieve the robot.

- Knowledge /Skills:
- (g) 1. KHT/BAT verify location of any towed wiring/cable systems
 - (f) 2. KHT/BAT perform actions to up-right robot
 - (f) 3. KHT/BAT perform immediate actions for loss of operation
 - (g) 4. KHT/BAT return robot to safe area/OCU
 - (g) 5. KHT/BAT recover robot remotely
 - (g) 6. KHT/BAT recover robot manually

Performance Step: 6. Conduct post-op preventive maintenance checks and services (PMCS).

- Knowledge /Skills:
- (b) 1. KHT/BAT remove all dirt and debris from robot
 - (b) 2. KHT/BAT inspect robot and components for damage
 - (b) 3. KHT/BAT inspect cable/wire harness for damage or frays
 - (b) 4. KHT/BAT inspect component connectors for damage
 - (b) 5. KHT/BAT inspect antennas for damage
 - (b) 6. KHT/BAT check camera lenses for cracks
 - (b) 7. KHT/BAT inspect tracks for cuts and damage
 - (b) 8. KHT/BAT inspect drive sprockets for obstructions or damage
 - (h) 9. KHT/BAT report damage to organizational maintenance
 - (b) 10. KHT/BAT prepare robot for stowage
 - (b) 11. KHT/BAT store robot for transportation
 - (b) 12. KHT/BAT remove batteries
 - (b) 13. KHT/BAT recharge batteries
 - (h) 14. KHT/BAT prepare operational forms and reports if applicable
 - (h) 15. KHT/BAT record data on appropriate forms



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1009

TASK BEHAVIOR: Identify Explosive Hazards (EH)

DATE OF LEARNING ANALYSIS: 20120419

Performance Step: 1. Visually identify explosive hazard markers and indicators.

- Knowledge /Skills:
- (a) 1. KHT/BAT know NATO/International marking symbols
 - (b) 2. KHT/BAT recognize primary/secondary markers for enemy EH
 - (b) 3. KHT/BAT identify possible locations of EH
 - (b) 4. KHT/BAT identify out of place objects
 - (b) 5. KHT/BAT identify disturbed earth
 - (b) 6. KHT/BAT identify changes in civilian behavior
 - (b) 7. KHT/BAT identify danger zones
 - (b) 8. KHT/BAT recognize out of place vegetation
 - (b) 9. KHT/BAT recognize out of place non-organic debris
 - (b) 10. KHT/BAT identify potential aiming points
 - (b) 11. KHT/BAT identify suspicious vehicles
 - (b) 12. KHT/BAT look for ammunition packing material
 - (b) 13. KHT/BAT look for animal carcasses
 - (b) 14. KHT/BAT look for surfaced laid EH
 - (b) 15. KHT/BAT identify known EH areas
 - (b) 16. KHT/BAT look for vehicle path indicators
 - (b) 17. KHT/BAT look for displaced civilian traffic patterns
 - (b) 18. KHT/BAT gather HUMINT
 - (b) 19. KHT/BAT identify abandoned tools and equipment

Performance Step: 2. Identify components of Improvised Explosive Devices (IEDs).

- Knowledge /Skills:
- (a) 1. KHT/BAT know terms related to IEDs
 - (a) 2. KHT/BAT know terms related to projected munitions
 - (a) 3. KHT/BAT know terms related to dropped munitions
 - (a) 4. KHT/BAT know terms related to placed munitions
 - (a) 5. KHT/BAT know terms related to booby traps
 - (a) 6. KHT/BAT know terms related to thrown munitions
 - (a) 7. KHT/BAT define IEDs

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- (c) 8. KHT/BAT recognize command detonated initiating systems
- (c) 9. KHT/BAT recognize times detonating systems
- (c) 10. KHT/BAT recognize victim activated initiating systems
- (c) 11. KHT/BAT recognize casing of suspected IED
- (c) 12. KHT/BAT identify types of main charges
- (i) 13. KHT/BAT define HME
- (i) 14. KHT/BAT identify HME
- (i) 15. KHT/BAT determine biological/chemical components of IEDs
- (c) 16. KHT/BAT identify power source

Performance Step: 3. Identify booby traps.

- Knowledge /Skills:
- (d) 1. KHT/BAT recognize explosive booby traps
 - (d) 2. KHT/BAT recognize non-explosive booby traps
 - (b) 3. KHT/BAT identify key components of a booby trap
 - (a) 4. KHT/BAT define booby traps
 - (d) 5. KHT/BAT identify initiating system of a boobytrap
 - (d) 6. KHT/BAT recognize trip wire/pull initiating system
 - (d) 7. KHT/BAT recognize a pressure release initiating system
 - (d) 8. KHT/BAT identify pressure release initiating system
 - (d) 9. KHT/BAT identify tension release initiating system
 - (d) 10. KHT/BAT recognize biological/chemical booby traps

Performance Step: 4. Identify thrown munitions.

- Knowledge /Skills:
- (a) 1. KHT/BAT define thrown munitions
 - (e) 2. KHT/BAT identify safeties of thrown munitions
 - (e) 3. KHT/BAT identify striker-release fuzing of thrown munitions
 - (e) 4. KHT/BAT identify pull-friction fuzing of thrown munitions
 - (e) 5. KHT/BAT identify a heat thrown munitions
 - (e) 6. KHT/BAT identify a fragmentary thrown munitions
 - (e) 7. KHT/BAT identify incendiary thrown munitions
 - (e) 8. KHT/BAT identify smoke grenades
 - (e) 9. KHT/BAT identify riot control grenades
 - (e) 10. KHT/BAT identify blast thrown munitions

Performance Step: 5. Identify projected munitions.



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- Knowledge /Skills:
- (a) 1. KHT/BAT define projected munitions
 - (f) 2. KHT/BAT identify markings of projected munitions
 - (f) 3. KHT/BAT identify main charges of projected munitions
 - (f) 4. KHT/BAT identify safeties of projected munitions
 - (f) 5. KHT/BAT identify the characteristics of rocket assisted projected munitions
 - (f) 6. KHT/BAT identify rocket projected munitions
 - (f) 7. KHT/BAT identify characteristics of mortar projected munitions
 - (f) 8. KHT/BAT identify characteristics of ejection munitions
 - (f) 9. KHT/BAT identify the characteristics of bursting smoke projected munitions
 - (f) 10. KHT/BAT identify the characteristics of chemical projected munitions
 - (f) 11. KHT/BAT identify launched projected munitions
 - (f) 12. KHT/BAT identify projected projectile munitions
 - (f) 13. KHT/BAT identify rifle grenades

Performance Step: 6. Identify dropped munitions.

- Knowledge /Skills:
- (a) 1. KHT/BAT define dropped munitions
 - (g) 2. KHT/BAT identify markings of dropped munitions
 - (g) 3. KHT/BAT identify safeties for dropped munitions
 - (g) 4. KHT/BAT identify the characteristics of dropped munitions
 - (g) 5. KHT/BAT identify the fuzing of dropped munitions
 - (g) 6. KHT/BAT identify the initiation system for dropped munitions placed as an IED
 - (g) 7. KHT/BAT identify general purpose bombs
 - (g) 8. KHT/BAT identify general purpose low drag (GPLD) bombs
 - (g) 9. KHT/BAT identify guided dropped munitions
 - (g) 10. KHT/BAT identify dispensed (sub munitions) dropped munitions

Performance Step: 7. Identify placed munitions.

- Knowledge /Skills:
- (a) 1. KHT/BAT define placed munitions
 - (h) 2. KHT/BAT identify markings of placed munitions
 - (h) 3. KHT/BAT identify the characteristics of placed munitions
 - (h) 4. KHT/BAT identify the fuzing of placed munitions
 - (h) 5. KHT/BAT identify the safeties of placed munitions
 - (h) 6. KHT/BAT identify typical locations of placed munitions



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- (h) 7. KHT/BAT identify characteristics of AP mines
- (h) 8. KHT/BAT identify characteristics of AT mines
- (k) 9. HKO detection assets
- (k) 10. KHT employ mine detector teams
- (k) 11. KHT/BAT use a mine detector
- (l) 12. KHT/BAT use a metal detector
- (k) 13. KHT/BAT calibrate a mine detector
- (l) 14. KHT/BAT calibrate a metal detector

Performance Step: 8. Record and report results.

- Knowledge /Skills:
- (i) 1. KHT/BAT report explosive spot reports
 - (i) 2. KHT/BAT report appropriate EOD 9-line
 - (i) 3. KHT/BAT record/report UXO reports



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1010TASK BEHAVIOR: Reduce Explosive Hazards (EH)DATE OF LEARNING ANALYSIS: 20120420Performance Step: 1. Evaluate go/no go criteria per the explosive hazard decision matrix.

- Knowledge /Skills:
- (a) 1. KHT/BAT define the EH Decision Matrix
 - (b) 2. Know the commander's intent
 - (c) 3. KHT/BAT execute the 5 Cs
 - (b) 4. Know mission parameters
 - (b) 5. BAT identify the explosive hazard
 - (b) 6. KHT/BAT determine what support is available
 - (b) 7. KHT/BAT determine bypass feasibility
 - (b) 8. KHT determine OP-tempo vs forensic requirements
 - (b) 9. KHT/BAT determine if you can safely reduce hazard

Performance Step: 2. Employ protective measures.

- Knowledge /Skills:
- (d) 1. KHT/BAT identify requirements needed for protective measures
 - (d) 2. KHT/BAT identify what is needed to protect nearby structures
 - (e) 3. KHT prevent earth shock effects from EH reduction
 - (e) 4. KHT prepare site with sand bags
 - (e) 5. KHT prepare site with entrenching techniques
 - (e) 6. KHT prepare site with buttressing techniques
 - (e) 7. KHT/BAT construct blast walls
 - (d) 8. KHT/BAT identify additional protection needed for personnel
 - (d) 9. KHT/BAT identify structure/facility protection requirements
 - (f) 10. KHT/BAT identify any accelerant that could be effected by EH reduction
 - (f) 11. KHT/BAT determine the NEW
 - (f) 12. KHT/BAT determine safety distance based on blast and frag (K factor)

Performance Step: 3. Build a charge appropriate to reduce the explosive hazard.

- Knowledge /Skills:
- (f) 1. KHT/BAT calculate the NEW
 - (f) 2. KHT/BAT determine the required tools and equipment
 - (f) 3. KHT/BAT determine the amount of Class V for single item destruction
 - (f) 4. KHT/BAT determine the amount of Class V for multi-item destruction



COMBAT ENGINEER OFFICER (WORKING)

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- (f) 5. KHT/BAT define the main components of the charge
- (f) 6. BAT determine the initiating system
- (f) 7. KHT define the different types of initiating systems
- (g) 8. KHT check non-electric firing systems
- (g) 9. KHT check remote power source
- (g) 10. KHT check continuity of electrical firing system if applicable (galvanometer, wire and caps)
- (h) 11. KHT/BAT calculate time fuse if applicable
- (h) 12. BAT build a charge
- (h) 13. BAT crimp blasting caps
- (h) 14. BAT prime charge systems
- (h) 15. KHT build charge transport system
- (h) 16. KHT/BAT prepare charge for transport

Performance Step: 4. Remotely place the charge.

- Knowledge /Skills:
- (del) 1. KHT/BAT determine best avenue of approach
 - (h) 2. KHT/BAT determine how to carry the charge
 - (i) 3. KHT/BAT place charge to counter main charge
 - (i) 4. KHT/BAT place charge to counter rocket motor
 - (i) 5. KHT/BAT place charge to counter shape charge
 - (i) 6. KHT/BAT initiate non-electric if applicable
 - (i) 7. BAT manipulate robotic arm for charge placement
 - (i) 8. KHT/BAT remotely verify charge placement
 - (del) 9. KHT/BAT determine avenue of egress
 - (del) 10. BAT return robotic equipment to safe area

Performance Step: 5. Detonate the charge.

- Knowledge /Skills:
- (j) 1. BAT verify all personnel and equipment are outside blast and fragmentation radius
 - (n) 2. KHT/BAT notify HAS units of intent to initiate shot
 - (j) 3. KHT/BAT attach firing system if applicable
 - (g) 4. KHT/BAT check firing system (continuity)
 - (k) 5. BAT detonate the charge
 - (l) 6. KHT/BAT conduct immediate action for misfire

Performance Step: 6. Conduct post-blast analysis.



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LEARNING ANALYSIS WORKSHEET (LAW)

- Knowledge /Skills:
- (m) 1. KHT/BAT define engineer post-blast analysis
 - (m) 2. KHT/BAT check shot
 - (m) 3. KHT/BAT look for kick-out and other explosive debris
 - (m) 4. KHT/BAT retrieve remnants and components of destroyed munitions for follow-on disposal as required
 - (m) 5. KHT/BAT retrieve remnants and components for turnover or final disposition to proper authorities as required

Performance Step: 7. Report results.

- Knowledge /Skills:
- (m) 1. KHT define engineer post-blast analysis
 - (m) 2. KHT/BAT check shot
 - (m) 3. KHT look for kick-out and other explosive debris
 - (m) 4. KHT/BAT retrieve remnants and components of destroyed munitions for follow-on disposal as required
 - (m) 5. KHT/BAT retrieve remnants and components for turnover or final disposition to proper authorities as required
 - (n) 6. BAT report Explosive Spot reports
 - (n) 7. BAT report appropriate EOD 9-Line
 - (n) 8. BAT record/report UXO reports
 - (n) 9. KHT/BAT complete expenditure report



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1011TASK BEHAVIOR: Design a ribbon bridge/raftDATE OF LEARNING ANALYSIS: 20130109Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT analyze METT-T
 - (b) 2. KHT measure width of gap
 - (b) 3. KHT determine approach slopes
 - (b) 4. KHT determine current velocity
 - (b) 5. KHT determine vehicle access routes
 - (b) 6. KHT determine water depth
 - (b) 7. KHT determine soil conditions
 - (b) 8. KHT determine the number of personnel required to operate boats; rafts; trucks; the bridge
 - (a) 9. KHT identify methods for employing the ribbon
 - (a) 10. KHT identify modes of transport for ribbon components
 - (b) 11. KHT determine spatial constraints
 - (d) 12. KHT estimate construction time
 - (c) 13. KHT determine logistical requirements
 - (c) 14. KHT to determine T/O and T/E
 - (c) 15. KHT to determine ribbon assets required
 - (c) 16. KHT identify ribbon configurations
 - (c) 17. KHT identify methods of rafting
 - (c) 18. KHT identify methods of anchoring the bridge
 - (c) 19. KHT classify a ribbon raft
 - (c) 20. KHT classify a ribbon bridge
 - (d) 21. KHT determine number of boats for ribbon bridge
 - (d) 22. KHT make liaison with the supported unit
 - (d) 23. KHT identify hazards associated with ribbon operations
 - (d) 24. KHT implement Operational Risk Management (ORM)

Performance Step: 2. Conduct reconnaissance of ribbon bridge/raft site.

- Knowledge /Skills:
- (b) 1. KHT measure width of gap
 - (b) 2. KHT determine approach slopes



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LEARNING ANALYSIS WORKSHEET (LAW)

- (b) 3. KHT determine current velocity
- (b) 4. KHT determine vehicle access routes
- (b) 5. KHT determine water depth
- (b) 6. KHT determine soil conditions

Performance Step: 3. Determine site condition and layout.

- Knowledge /Skills:
- (b) 1. KHT measure width of gap
 - (b) 2. KHT determine current velocity
 - (b) 3. KHT determine approach slopes
 - (b) 4. KHT determine vehicle access routes
 - (b) 5. KHT determine water depth
 - (b) 6. KHT determine soil conditions

Performance Step: 4. Determine logistical support requirements.

- Knowledge /Skills:
- (d) 1. KHT determine the number of personnel required to operate boats, bays, trucks
 - (a) 2. KHT identify methods of employing the ribbon
 - (a) 3. KHT identify modes of transport for ribbon components
 - (b) 4. KHT determine spatial constraints
 - (d) 5. KHT estimate construction time

Performance Step: 5. Determine engineer estimate of supportability.

- Knowledge /Skills:
- (c) 1. KHT determine logistical requirements
 - (c) 2. KHT determine T/O and T/E

Performance Step: 6. Determine configuration of the ribbon bridge/raft.

- Knowledge /Skills:
- (c) 1. KHT determine ribbon assets required
 - (a) 2. KHT identify ribbon configurations
 - (c) 3. KHT identify methods of rafting
 - (c) 4. KHT identify methods of anchoring the bridge
 - (c) 5. KHT classify a ribbon raft
 - (c) 6. KHT classify a ribbon bridge
 - (d) 7. KHT estimate the number of required boats for a ribbon raft
 - (b) 8. KHT determine gap width
 - (b) 9. KHT determine current velocity

Performance Step: 7. Review the ribbon bridge/raft design.



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LEARNING ANALYSIS WORKSHEET (LAW)

Knowledge /Skills: (d) 1. KHT make liaison with the supported unit

Performance Step: 8. Coordinate suppression of enemy force overwatching the crossing area.

Knowledge /Skills: (del) 1. KHT/BAT determine time required for suppression
(del) 2. KHT/BAT identify fire support coordinator
(del) 3. KHT/BAT recommend location of fires
(del) 4. KHT/BAT submit request for fire support

Performance Step: 9. Establish safety plan.

Knowledge /Skills: (d) 1. KHT identify hazards associated with ribbon operations
(d) 2. KHT implement Operational Risk Management (ORM)

Performance Step: 10. Coordinate obscuration of the crossing site.

Knowledge /Skills: (del) 1. KHT/BAT recommend location of obscuration
(del) 2. KHT/BAT submit request for fire support
(del) 3. KHT/BAT determine time required for obscuration
(del) 4. KHT/BAT identify the fire support coordinator



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1012

TASK BEHAVIOR: Design a Medium Girder Bridge (MGB)

DATE OF LEARNING ANALYSIS: 20120120

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (a) 1. KHT measure the AR gap
 - (a) 2. KHT identify slope criteria
 - (a) 3. KHT determine bank height restrictions
 - (a) 4. KHT determine gap depth
 - (a) 5. KHT determine soil bearing capacity
 - (a) 6. KHT determine bank height restrictions
 - (a) 7. KHT determine suitable access routes
 - (a) 8. KHT determine wind speed
 - (b) 9. KHT determine military load classification
 - (a) 10. KHT measure width of a gap
 - (b) 11. KHT determine vehicle access routes
 - (b) 12. KHT determine water depth
 - (b) 13. KHT utilize the military load classification system
 - (a) 14. KHT measure a gap
 - (b) 15. KHT identify MGB configurations
 - (b) 16. KHT select appropriate MGB configuration
 - (b) 17. KHT use bridge selection tables
 - (a) 18. KHT determine minimum spatial requirements for the MGB site
 - (c) 19. KHT compute required MGB assets
 - (c) 20. KHT select correct proforma
 - (c) 21. KHT explain the proforma process
 - (c) 22. KHT complete a proforma
 - (c) 23. KHT identify key construction points
 - (c) 24. KHT identify types of MGB pallets
 - (c) 25. KHT offload pallets
 - (c) 26. KHT determine roller beam configurations
 - (a) 27. KHT calculate slopes (approach / transverse)
 - (d) 28. KHT determine proper T/O to construct an MGB



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LEARNING ANALYSIS WORKSHEET (LAW)

- (d) 29. KHT determine require T/E to construct an MGB
- (d) 30. KHT determine amount of time necessary to construct an MGB

Performance Step: 2. Conduct a reconnaissance of the bridge site.

- Knowledge /Skills:
- (a) 1. KHT measure AR gap
 - (a) 2. KHT identify slope criteria (approach and transverse)
 - (a) 3. KHT determine soil bearing capacity
 - (a) 4. KHT determine bank height restrictions
 - (a) 5. KHT determine gap depth
 - (a) 6. KHT determine suitable access routes
 - (a) 7. KHT determine wind speed

Performance Step: 3. Determine configuration of Medium Girder Bridge (MGB) to be utilized.

- Knowledge /Skills:
- (b) 1. KHT determine military load classification
 - (e) 2. BAT determine military load classification
 - (b) 3. KHT utilize the military load classification system
 - (a) 4. KHT measure the gap
 - (e) 5. BAT measure the gap
 - (b) 6. KHT identify MGB configurations
 - (b) 7. KHT select appropriate MGB configuration
 - (e) 8. BAT select appropriate MGB configuration
 - (b) 9. KHT use bridge selection tables
 - (e) 10. BAT use bridge launching/recovery tables
 - (e) 11. BAT construct erection equipment
 - (e) 12. BAT construct MGB bridge
 - (e) 13. BAT dress the bridge
 - (e) 14. BAT recover the bridge

Performance Step: 4. Determine site condition and layout.

- Knowledge /Skills:
- (a) 1. KHT determine minimum spatial requirements for the MGB site
 - (c) 2. KHT compute required MGB assets
 - (c) 3. KHT select correct proforma
 - (c) 4. KHT explain the proforma process
 - (c) 5. KHT complete a proforma
 - (c) 6. KHT identify key construction points



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- (c) 7. KHT identify types of MGB pallets
- (c) 8. KHT offload pallets
- (c) 9. KHT determine roller beam configurations
- (a) 10. KHT calculate slopes (approach/transverse)
- (a) 11. KHT determine soil bearing capacity
- (a) 12. KHT determine bank height restrictions
- (a) 13. KHT determine gap depth
- (a) 14. KHT determine wind speed
- (a) 15. KHT measure the AR gap

Performance Step: 5. Develop engineer estimate of supportability.

- Knowledge /Skills:
- (d) 1. KHT determine proper T/O to construct an MGB
 - (d) 2. KHT determine required T/E to construct an MGB
 - (d) 3. KHT determine amount of time necessary to construct an MGB

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1013TASK BEHAVIOR: Design a non-standard bridgeDATE OF LEARNING ANALYSIS: 20130912Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT perform METT-T
 - (del) 2. KHT review recon information
 - (del) 3. BAT review recon information
 - (del) 4. KHT determine soil type
 - (del) 5. BAT determine soil type
 - (del) 6. KHT identify limiting factors for roads
 - (del) 7. KHT conduct engineer reconnaissance

Performance Step: 2. Conduct site reconnaissance.

- Knowledge /Skills: (del) 1. DELETE: Taught to mastery in Engineer Reconnaissance class

Performance Step: 3. Determine bridge type.

- Knowledge /Skills:
- (b) 1. KHT analyze the mission to determine military load classification
 - (c) 2. BAT analyze the mission to determine military load classification
 - (b) 3. KHT analyze terrain data to determine appropriate bridge sites
 - (c) 4. BAT analyze terrain data to determine appropriate bridge sites
 - (del) 5. KHT employ the military load classification system
 - (a) 6. KHT identify the substructure components of a nonstandard bridge
 - (c) 7. BAT identify the substructure components of a nonstandard bridge
 - (a) 8. KHT explain the function of a nonstandard bridge substructure components
 - (a) 9. KHT identify the superstructure components of a nonstandard bridge
 - (c) 10. BAT identify the superstructure components of a nonstandard bridge
 - (a) 11. KHT explain the function of a nonstandard bridge superstructure components

Performance Step: 4. Determine superstructure type.

- Knowledge /Skills:
- (a) 1. KHT explain the function of superstructure components
 - (b) 2. KHT employ design charts
 - (c) 3. BAT employ design charts
 - (b) 4. KHT employ design tables



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LEARNING ANALYSIS WORKSHEET (LAW)

- (c) 5. BAT employ design tables
- (del) 6. KHT solve mathematical equations

Performance Step: 5. Determine substructure type.

- Knowledge /Skills:
- (a) 1. KHT explain the function of substructure components
 - (b) 2. KHT employ design charts
 - (c) 3. BAT employ design charts
 - (b) 4. KHT employ design tables
 - (c) 5. BAT employ design tables
 - (del) 6. KHT solve mathematical equations
 - (del) 7. KHT design civilian type abutments
 - (del) 8. KHT design pile type abutments

Performance Step: 6. Determine bill of materials (BOM).

- Knowledge /Skills:
- (c) 1. KHT calculate board feet
 - (d) 2. BAT calculate board feet
 - (del) 3. KHT identify structural components
 - (del) 4. KHT calculate fasteners
 - (del) 5. KHT calculate a material take-off sheet

Performance Step: 7. Coordinate support requirements.

- Knowledge /Skills:
- (del) 1. DELETE: Not part of designing bridge

Performance Step: 8. Illustrate final design.

- Knowledge /Skills:
- (del) 1. KHT sketch
 - (del) 2. KHT use CADD
 - (del) 3. KHT produce civil engineer-type drawings

Performance Step: 9. Submit design.

- Knowledge /Skills:
- (del) 1. KHT/BAT submit final design



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1014

TASK BEHAVIOR: Classify a bridge

DATE OF LEARNING ANALYSIS: 20120521

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (del) 2. KHT/BAT identify critical info requirements
 - (del) 3. KHT determine what types of vehicular assets are found in Marine Corps units

Performance Step: 2. Coordinate support/security requirements with supported units.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify security requirements
 - (del) 2. KHT/BAT determine support required
 - (del) 3. KHT/BAT submit support requests to appropriate staff sections

Performance Step: 3. Prepare bridge reconnaissance team. (include all applicable forms and reports).

- Knowledge /Skills:
- (del) 1. KHT identify engineer recon reports/forms
 - (del) 2. BAT brief engineer recon team
 - (del) 3. KHT conduct rehearsals with engineer recon team

Performance Step: 4. Conduct bridge reconnaissance.

- Knowledge /Skills:
- (del) 1. KHT identify nonstandard bridge components
 - (del) 2. KHT use a tape measure
 - (a) 3. KHT identify critical dimensions
 - (del) 4. BAT measure critical dimensions
 - (a) 5. KHT identify types of nonstandard bridges and locate formulas of same on GTA 05-07-013
 - (a) 6. KHT employ the military load classification system

Performance Step: 5. Make appropriate calculations.

- Knowledge /Skills:
- (a) 1. KHT solve algebraic equations
 - (a) 2. KHT use GTA 05-07-013 to solve for bridge classification
 - (a) 3. KHT classify wheeled vehicles using the military load classification system
 - (a) 4. KHT classify tracked vehicles using the military load classification system
 - (a) 5. KHT differentiate between single and combination vehicles for classification purposes



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (a) 6. KHT employ the military load classification system

Performance Step: 6. Determine bridge classification/restrictions.

- Knowledge /Skills:
- (a) 1. KHT differentiate between single and combination vehicles
 - (a) 2. KHT identify load class shortfalls of a reconnoitered bridge
 - (a) 3. KHT identify types of vehicular crossings
 - (a) 4. KHT determine width and height restrictions using GTA 05-07-013
 - (b) 5. KHT design bridge signs

Performance Step: 7. Submit reports.

- Knowledge /Skills:
- (del) 1. KHT/BAT submit appropriate reconnaissance form (DA Form)
 - (del) 2. KHT/BAT submit required data via radio



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1015TASK BEHAVIOR: Plan engineer aspects of a gap crossing operationDATE OF LEARNING ANALYSIS: 20120424Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (a) 2. KHT/BAT identify the 3 categories of river crossing ops
 - (c) 3. BAT recommend appropriate crossing means
 - (e) 4. BAT identify potential crossing sites
 - (g) 5. KHT/BAT identify the phases and associated engineer tasks of river crossing ops
 - (b) 6. KHT/BAT describe the impact of surprise on river crossing ops
 - (b) 7. KHT/BAT describe the impact of preparation on river crossing ops
 - (b) 8. KHT/BAT describe the impact of flexible planning on river crossing ops
 - (b) 9. KHT/BAT describe the impact of traffic control on river crossing ops
 - (b) 10. KHT/BAT describe the impact of T/O on river crossing ops
 - (b) 11. KHT/BAT describe the impact of speed in exploitation on river crossing ops
 - (del) 12. KHT/BAT define the limits of the battle space
 - (e) 13. KHT/BAT identify significant features of the battle space
 - (e) 14. KHT/BAT identify the impact that significant features of the battle space have in determining the enemy's most probably course of action
 - (e) 15. KHT/BAT identify sources of information
 - (e) 16. KHT/BAT identify critical information on the obstacle and surrounding terrain
 - (d) 17. KHT/BAT identify critical info on the enemy
 - (del) 18. KHT/coordinate with the S-2/G-2 staff
 - (del) 19. KHT/BAT conduct a route reconnaissance
 - (d) 20. KHT/BAT identify critical information requirements of the obstacle
 - (d) 21. KHT/BAT identify critical information requirements to the terrain
 - (e) 22. KHT/BAT identify possible sources of information

Performance Step: 2. Task organize personnel and equipment.

- Knowledge /Skills:
- (del) 1. KHT/BAT task organize personnel and equipment to perform engineer reconnaissance



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (f) 2. KHT/BAT task organize assets for crossing ops
- (f) 3. KHT/BAT identify the associated tasks of each element within a crossing force during river crossing operations

Performance Step: 3. Coordinate with supported unit commander.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify points of coordination to be addressed by the support force commander and supported forces commanders
 - (f) 2. KHT/BAT identify the associated tasks of each element within a crossing force during river crossing operations
 - (del) 3. KHT/BAT identify fire support required for offensive operations
 - (del) 4. KHT/BAT identify logistical support required for military bridging operations

Performance Step: 4. Issue orders to engineer personnel.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify an operations order
 - (del) 2. KHT/BAT create an operations order
 - (del) 3. KHT/BAT prepare an engineer appendix
 - (del) 4. KHT/BAT develop a mission statement
 - (del) 5. KHT/BAT develop a concept of operations

Performance Step: 5. Establish tactical control measures.

- Knowledge /Skills:
- (g) 1. KHT/BAT identify exit bank objective
 - (g) 2. KHT/BAT identify intermediate objective
 - (g) 3. KHT/BAT identify bridgehead line
 - (h) 4. KHT/BAT identify release line
 - (h) 5. KHT/BAT identify release point
 - (h) 6. KHT/BAT identify engineer regulation point
 - (h) 7. KHT/BAT identify crossing sites
 - (h) 8. KHT/BAT identify traffic control point
 - (h) 9. KHT/BAT identify staging areas
 - (h) 10. KHT/BAT identify call-forward area
 - (h) 11. KHT/BAT identify holding area
 - (h) 12. KHT/BAT identify assembly area
 - (h) 13. KHT/BAT identify engineer equipment park
 - (del) 14. KHT/BAT depict required elements on a military overlay

Performance Step: 6. Coordinate required logistics support.



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- Knowledge /Skills: (del) 1. KHT/BAT identify logistical support required for military bridging operations
(del) 2. KHT/BAT identify adjacent engineer support available
(del) 3. KHT/BAT submit logistical support requests to appropriate staff sections

Performance Step: 7. Coordinate with supported unit.

- Knowledge /Skills: (g) 1. KHT/BAT identify when suppression is conducted during gap crossing
(g) 2. KHT/BAT identify when obscuration is conducted during gap crossing
(g) 3. KHT/BAT identify when the area should be secure during gap crossing
(g) 4. KHT/BAT identify how to reduce the obstacle during gap crossing
(del) 5. KHT/BAT identify appropriate staff sections
(del) 6. KHT/BAT submit required reports
(del) 7. KHT/BAT submit requests
(del) 8. KHT/BAT brief commander on the gap crossing operation

Performance Step: 8. Submit required engineer reports.

- Knowledge /Skills: (e) 1. KHT/BAT complete engineer recon forms and reports
(h) 2. KHT/BAT depict required elements on a military overlay
(del) 3. KHT/BAT prepare an engineer appendix
(del) 4. KHT/BAT identify operation order format

Performance Step: 9. Coordinate with bridge force, support force, and assault force, as required.

- Knowledge /Skills: (f) 1. KHT/BAT identify the associated tasks of each element within a crossing force during river crossing operations
(del) 2. KHT/BAT identify points of coordination to be addressed by the support force commander and supported forces commanders
(del) 3. KHT/BAT identify tactical control measures to separate force commanders

Performance Step: 10. Plan for follow-on actions.

- Knowledge /Skills: (del) 1. KHT/BAT conduct follow on operations



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-MOBL-1016

TASK BEHAVIOR: Plan construction of an expeditionary airfield/landing zone

DATE OF LEARNING ANALYSIS: 20130912

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (del) 2. KHT determine threat mobility requirements
 - (a) 3. KHT determine friendly mobility requirements
 - (a) 4. KHT identify avenues of approach
 - (a) 5. KHT identify key terrain
 - (del) 6. KHT identify friendly area of operations and influence
 - (a) 7. BAT determine seasonal constraints
 - (a) 8. BAT determine drainage characteristics
 - (a) 9. KHT/BAT differentiate between restricted, severely restricted and unrestricted terrain
 - (del) 10. BAT determine the effects of urban/cultural areas
 - (b) 11. KHT identify FOB/LZ criteria
 - (a,b) 12. HKO aircraft characteristics
 - (a) 13. BAT identify restrictive obstacle criteria for a LZ

Performance Step: 2. Conduct airfield/landing zone site reconnaissance.

- Knowledge /Skills:
- (del) 1. KHT/BAT execute a patrol
 - (b) 2. KHT/BAT complete form DA 1711-R (Engineer Reconnaissance Report)
 - (a) 3. KHT/BAT identify all areas and points of engineer interest
 - (a) 4. KHT/BAT identify existing obstacles
 - (a) 5. BAT identify slope criteria for a LZ
 - (a) 6. BAT evaluate terrain for use as a Landing Zone (LZ)
 - (a,b) 7. HKO types of aircraft
 - (a,b) 8. HKO rotary wing aircraft
 - (a,b) 9. HKO fixed wing aircraft
 - (a) 10. KHT/BAT determine approaches/departures
 - (b) 11. KHT/BAT determine takeoff/landing direction
 - (b) 12. KHT/BAT determine selection of landing zone



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 3. Advise commander on site selection.

- Knowledge /Skills:
- (b) 1. KHT/BAT complete 1711-R
 - (b) 2. BAT brief supported unit commander on selection
 - (b) 3. HKO supported unit commander's intent

Performance Step: 4. Develop construction plan.

- Knowledge /Skills:
- (del) 1. HKO surface condition needed
 - (a) 2. HKO classes of aircraft
 - (a) 3. HKO aircraft classification
 - (del) 4. KHT/BAT determine time to clear/grub site
 - (c) 5. KHT/BAT determine FOD cover
 - (del) 6. KHT/BAT determine construction time
 - (b) 7. BAT depict site plan on overlay
 - (c) 8. KHT/BAT determine AM-2 matting sytem requirements
 - (c) 9. HKO different FOD cover
 - (b) 10. BAT depict obstacles (height/topography) on overlay

Performance Step: 5. Determine task organization of equipment and personnel.

- Knowledge /Skills:
- (del) 1. KHT/BAT determine personnel needed
 - (del) 2. KHT/BAT determine equipment needed
 - (del) 3. KHT/BAT determine logistical requirements
 - (del) 4. KHT/BAT determine resource requirements



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-PLAN-1001

TASK BEHAVIOR: Participate in the Marine Corps Planning Process (MCP)

DATE OF LEARNING ANALYSIS: 20120815

Performance Step: 1. Assist in problem framing.

- Knowledge /Skills:
- (b) 1. KHT/BAT analyze METT-T from a engineer's perspective
 - (b) 2. KHT/BAT conduct Intelligence Preparation of the Battlefield (IPB)
 - (b) 3. KHT/BAT define the battlefield environment
 - (b) 4. KHT/BAT describe battlefield effects
 - (b) 5. KHT/BAT analyze the threat
 - (b) 6. BAT determine enemy courses of action
 - (b) 7. BAT identify mobility corridors
 - (b) 8. BAT identify restrictive terrain
 - (b) 9. BAT identify severely restrictive terrain
 - (del) 10. BAT identify fields of fire
 - (b) 11. KHT/BAT identify Requests for Information (RFI) to the S-2/G-2
 - (b) 12. BAT identify existing intelligence
 - (b) 13. BAT analyze existing intelligence
 - (b) 14. BAT identify additional intel required
 - (b) 15. KHT/BAT submit RFIs
 - (del) 16. KHT/BAT conduct engineer reconnaissance as required
 - (b) 17. BAT conduct map reconnaissance
 - (b) 18. BAT interpret existing intel reports
 - (b) 19. BAT determine whether engineer reconnaissance is required
 - (del) 20. BAT select TO/TE for reconnaissance mission
 - (del) 21. BAT issue orders
 - (del) 22. BAT execute an engineer recon mission
 - (del) 23. BAT submit required reports
 - (b) 24. KHT/BAT identify units requiring engineering support
 - (a) 25. KHT/BAT determine commander's intent
 - (b) 26. BAT identify support relationships
 - (b) 27. KHT/BAT determine specialized engineer mission
 - (b) 28. KHT/BAT determine implied engineer mission



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (a) 29. KHT/BAT determine the commander's end state
- (b) 30. KHT/BAT determine mobility requirements for the supported unit
- (b) 31. KHT/BAT identify available engineer resources within the Area of Responsibility
- (b) 32. KHT/BAT identify TO/TE
- (b) 33. KHT analyze the scheme of maneuver
- (del) 34. KHT select breach sites

Performance Step: 2. Assist in the development of courses of action.

- Knowledge /Skills:
- (c) 1. KHT/BAT prepare engineer estimate of supportability
 - (b) 2. BAT determine engineer platoon capabilities
 - (del) 3. BAT employ project management tool
 - (b) 4. BAT determine engineer mission requirements
 - (del) 5. BAT identify logistical requirements to the S-4
 - (del) 6. KHT/BAT develop an engineer mission
 - (c) 7. KHT/BAT develop an engineer mission
 - (c) 8. KHT/BAT develop engineer concept of operations
 - (a) 9. KHT/BAT identify engineer tasks
 - (b) 10. KHT/BAT identify support requirements of engineer tasks
 - (c) 11. KHT/BAT identify the parts of a course of action
 - (c) 12. KHT/BAT identify the course of action (COA) which best utilizes engineer assets in support of the commander's intent
 - (del) 13. KHT employ SOSRR
 - (del) 14. KHT employ MAGTF breaching fundamentals
 - (del) 15. KHT employ supporting arms

Performance Step: 3. Assist in wargaming of courses of action.

- Knowledge /Skills:
- (b) 1. KHT/BAT analyze threat engineer equipment capabilities
 - (b) 2. KHT/BAT identify threat engineer doctrine
 - (b) 3. KHT/BAT Identify the effects of terrain and weather on threat operations
 - (b) 4. KHT/BAT identify means of defeating threat capabilities
 - (c) 5. BAT analyze courses of action

Performance Step: 4. Assist in comparison and recommendation of courses of action.

- Knowledge /Skills:
- (b) 1. KHT/BAT identify external support required
 - (c) 2. BAT create concept of operations



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (d) 3. KHT/BAT determine command relationships
- (d) 4. KHT/BAT determine support relationships
- (c) 5. KHT/BAT revise engineer estimate/statement of supportability
- (del) 6. KHT/BAT conduct a military brief

Performance Step: 5. Assist in development of appropriate staff products, operations plans, orders, annexes, and appendices.

- Knowledge /Skills:
- (del) 1. KHT/BAT employ project management tool
 - (c) 2. KHT/BAT fill out appropriate engineer reports
 - (c) 3. BAT develop an engineer concept of operations
 - (b) 4. BAT determine protection requirements of given TO/TE
 - (del) 5. BAT determine engineer priorities
 - (del) 6. KHT/BAT task organize personnel
 - (del) 7. KHT/BAT task organize equipment
 - (d) 8. KHT/BAT determine command relationships
 - (d) 9. KHT/BAT determine support relationships
 - (c) 10. KHT/BAT develop mission statement
 - (b) 11. KHT/BAT identify external support required
 - (del) 12. KHT/BAT coordinate external support required
 - (c) 13. KHT/BAT identify operation order
 - (c) 14. KHT/BAT create an operation order
 - (c) 15. KHT/BAT identify an engineer annex or appendix to an operation order
 - (c) 16. KHT/BAT develop an engineer annex or appendix to an operation order
 - (c) 17. BAT identify required reports
 - (c) 18. KHT/BAT develop required reports
 - (c) 19. KHT/BAT submit reports
 - (c) 20. KHT/BAT develop overlays

Performance Step: 6. Assist in transition by compiling the components of an operations order for distribution to subordinate units.

- Knowledge /Skills:
- (e) 1. BAT issue an operation order
 - (e) 2. BAT identify different types of transition drills
 - (e) 3. KHT/BAT participate in transition drills
 - (del) 4. BAT conduct a military brief



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-PLAN-1002TASK BEHAVIOR: Plan a base campDATE OF LEARNING ANALYSIS: 20110720Performance Step: 1. Conduct mission analysis.

Knowledge /Skills: (del) 1. KHT/BAT analyze METT-T
 (del) 2. KHT/BAT identify additional intelligence required

Performance Step: 2. Conduct a site reconnaissance.

Knowledge /Skills: (a) 1. BAT conduct map reconnaissance
 (del) 2. KHT conduct engineer reconnaissance
 (a) 3. BAT determine spatial requirements
 (del) 4. KHT conduct soil analysis

Performance Step: 3. Determine site requirements.

Knowledge /Skills: (c) 1. KHT/BAT determine footprint of base camp site
 (c) 2. BAT locate landing zones
 (c) 3. BAT locate medical facilities
 (c) 4. BAT locate billeting facilities
 (c) 5. BAT locate fuel points
 (c) 6. BAT determine COC spatial requirements
 (c) 7. BAT determine tentage required

Performance Step: 4. Determine camp layout.

Knowledge /Skills: (c) 1. BAT locate heads
 (c) 2. BAT determine spatial offsets for heads
 (c) 3. BAT locate messing facilities
 (c) 4. BAT determine spatial offsets for messing facilities
 (c) 5. BAT locate hygiene facilities
 (c) 6. BAT determine spatial offsets for hygiene facilities
 (c) 7. BAT locate ammunition supply points
 (c) 8. BAT determine spatial offsets for ammunition supply points
 (c) 9. BAT determine spatial offsets for landing zones
 (c) 10. BAT determine spatial offsets for medical facilities



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (c) 11. BAT determine spatial offsets for billeting facilities
- (c) 12. BAT determine spatial offsets for fuel points
- (c) 13. BAT locate other commodities (Supply, Class IV lot, HE/MT lot, Hazmat, etc.)
- (c) 14. KHT lay out roads

Performance Step: 5. Select a temporary facility, if available.

- Knowledge /Skills:
- (b) 1. BAT identify what type of temporary facilities are required
 - (del) 2. BAT analyze Commander's Intent/Concept of Operations
 - (b) 3. BAT determine temporary facility requirements to meet operational requirements listed in the Commander's Intent/Concept of Operations

Performance Step: 6. Determine logistical support requirements.

- Knowledge /Skills:
- (b) 1. BAT identify required equipment
 - (del) 2. KHT identify capabilities of engineer equipment
 - (b) 3. KHT determine water requirements
 - (b) 4. KHT determine electrical power requirements
 - (b) 5. KHT determine fuel requirements
 - (del) 6. BAT develop a BOM for Class IV material
 - (del) 7. KHT calculate for wire
 - (del) 8. KHT calculate for sandbags
 - (del) 9. BAT calculate production estimation
 - (del) 10. BAT determine motor transport requirements
 - (d) 11. BAT coordinate Host Nation support
 - (d) 12. BAT coordinate purple (joint) support
 - (b) 13. KHT determine chow requirements
 - (del) 14. KHT determine AM-2 requirements
 - (d) 15. Know which US agencies are available for support
 - (d) 16. Know what kind of support US agencies can provide
 - (d) 17. Know what types of support DOD contractors can provide
 - (d) 18. HKO the Maritime Prepositioned Ship embark manifest

Performance Step: 7. Determine bill of materials (BOM).

- Knowledge /Skills:
- (del) 1. BAT calculate a BOM that encompasses all Class (I-IX) material

Performance Step: 8. Determine utility requirements.



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- Knowledge /Skills: (b) 1. BAT determine electrical power requirements
 (b) 2. BAT determine water requirements
 (b) 3. BAT determine hygiene requirements
 (b) 4. BAT determine refrigeration requirements

Performance Step: 9. Determine drainage requirements.

- Knowledge /Skills: (del) 1. BAT design a drainage system

Performance Step: 10. Develop obstacle/barrier plan, as required.

- Knowledge /Skills: (del) 1. BAT conduct countermobility planning
 (del) 2. BAT execute countermobility operations

Performance Step: 11. Establish a survivability plan, as required.

- Knowledge /Skills: (del) 1. BAT develop force protection initiatives

Performance Step: 12. Determine task organization of personnel and equipment.

- Knowledge /Skills: (e) 1. BAT conduct CPM planning
 (e) 2. BAT adjust for attachments/detachments

Performance Step: 13. Illustrate final design/design blueprints.

- Knowledge /Skills: (del) 1. BAT sketch
 (del) 2. BAT scale a sketch

Performance Step: 14. Coordinate with supported commander, as required.

- Knowledge /Skills: (del) 1. KHT/BAT identify appropriate staff sections
 (del) 2. KHT/BAT submit required reports
 (del) 3. KHT/BAT submit requests
 (del) 4. KHT/BAT brief commander on the construction plan

Performance Step: 15. Coordinate logistical support, as required.

- Knowledge /Skills: (del) 1. KHT/BAT determine support required
 (del) 2. KHT/BAT identify adjacent engineer support available
 (del) 3. KHT/BAT determine support from host nation available
 (del) 4. KHT/BAT submit logistical support requests to appropriate staff sections

Performance Step: 16. Incorporate safety measures to be taken at the construction site(s).

- Knowledge /Skills: (del) 1. KHT/BAT conduct an operational risk assessment
 (del) 2. KHT/BAT establish controls to mitigate risks



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 17. Coordinate security measures as required.

- Knowledge /Skills: (del) 1. KHT/BAT identify security requirements
 (del) 2. KHT/BAT submit requests for support as required

Performance Step: 18. Establish a waste disposal plan, as required.

- Knowledge /Skills: (b) 1. KHT/BAT determine types of waste for disposal
 (b) 2. KHT/BAT identify environmental concerns for waste disposal
 (b) 3. KHT/BAT determine means of waste disposal
 (b,c) 4. KHT/BAT determine location of burn sites
 (b,c) 5. KHT/BAT determine location of collection points
 (b) 6. HKO host nation support for waste disposal

Performance Step: 19. Establish an ammunition storage/ distribution, transportation plan, as required.

- Knowledge /Skills: (b) 1. KHT/BAT identify types of ammunition to store
 (b) 2. KHT/BAT determine blast and fragmentation SDZ
 (b,c) 3. KHT/BAT determine location of an ammunition supply points
 (b,c) 4. KHT/BAT determine spatial offsets for ammunition supply points

Performance Step: 20. Establish a bulk liquid storage plan.

- Knowledge /Skills: (b) 1. KHT/BAT plan for bulk fuel operations
 (b) 2. KHT/BAT plan for water distribution

Performance Step: 21. Establish a facility/ site maintenance and repair plan.

- Knowledge /Skills: (del) 1. KHT/BAT identify facility repair requirements
 (del) 2. KHT/BAT identify repair priorities
 (del) 3. KHT/BAT organize repair crews
 (e) 4. KHT/BAT develop a construction schedule
 (del) 5. KHT/BAT conduct maintenance inspections



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-RECN-1001

TASK BEHAVIOR: Conduct engineer reconnaissance operations

DATE OF LEARNING ANALYSIS: 20130717

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (a) 2. KHT determine threat mobility requirements
 - (a) 3. KHT determine friendly mobility requirements
 - (a) 4. KHT identify the effects of terrain on mobility
 - (a-g) 5. KHT identify avenues of approach
 - (a) 6. KHT identify threat capabilities
 - (a) 7. KHT identify friendly area of operations and influence
 - (a) 8. KHT identify lines of sight/fields of fire
 - (a-g) 9. KHT identify key terrain
 - (a) 10. KHT identify threat weapons system capabilities
 - (a) 11. KHT evaluate threat tactics
 - (a) 12. KHT decipher threat capabilities from intelligence briefs
 - (a-g) 13. KHT/BAT conduct a map reconnaissance
 - (a-g) 14. BAT read a map
 - (a) 15. BAT create a Modified Combined Obstacle Overlay (MCOO)

Performance Step: 2. Plan engineer reconnaissance operations.

- Knowledge /Skills:
- (a) 1. KHT/BAT plan reconnaissance operations
 - (h) 2. HKO urban areas

Performance Step: 3. Determine reconnaissance requirements.

- Knowledge /Skills:
- (b) 1. BAT classify a road
 - (c) 2. BAT classify a route
 - (del) 3. BAT determine drainage characteristics
 - (del) 4. BAT determine soil types
 - (b) 5. BAT determine radius of a curve
 - (b) 6. BAT determine height restrictions
 - (b) 7. BAT determine width restrictions
 - (b,c) 8. BAT determine MLC



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (b) 9. BAT determine percent of slope
- (b) 10. BAT determine seasonal constraints
- (b) 11. BAT identify the conditions of an existing route
- (c) 12. BAT identify route obstructions
- (c) 13. BAT employ route classification formula
- (d) 14. BAT evaluate possible ford sites
- (e) 15. BAT evaluate possible ferry sites
- (f) 16. BAT reconnoiter bridges
- (del) 17. BAT classify bridges
- (g) 18. BAT evaluate tunnels
- (d,e) 19. BAT determine current speed
- (d) 20. BAT identify bottom conditions
- (d,e) 21. BAT evaluate near and far bank conditions
- (e) 22. BAT identify gross vehicle weights
- (d,e,f) 23. BAT evaluate approaches
- (b,d,e,f,g) 24. BAT evaluate turnouts
- (g) 25. BAT identify types of portal/bore construction
- (del) 26. BAT measure with a tape
- (g) 27. BAT determine walkways in the bore
- (g) 28. BAT determine bore ventilation
- (b-g) 29. BAT employ engineer reconnaissance checklist
- (b-g) 30. BAT use GTA card 5-2-5
- (b-g) 31. BAT complete form DA 1711-R (Engineer Reconnaissance Report)
- (a,c) 32. BAT identify mobility corridors
- (a,c) 33. KHT/BAT differentiate between restricted, severely restricted and unrestricted terrain
- (a-g) 34. BAT determine the effects of urban/cultural areas
- (h) 35. BAT evaluate urban facilities
- (h) 36. BAT perform SWEAT (sewer, water, electrical, academic, transportation) reconnaissance
- (a-g) 37. BAT determine bypass

Performance Step: 4. Issue the warning order.

Knowledge /Skills: (a) 1. KHT/BAT issue a reconnaissance patrol order

Performance Step: 5. Task organize personnel and equipment.



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- Knowledge /Skills: (a) 1. KHT/BAT task organize personnel
 (a) 2. KHT/BAT task organize equipment (if applicable)
- Performance Step: 6. Coordinate security, fire support, and logistical support as required.
- Knowledge /Skills: (a) 1. KHT/BAT coordinate with support units (if applicable)
- Performance Step: 7. Issue the order.
- Knowledge /Skills: (del) 1. DELETE: TPD
- Performance Step: 8. Conduct rehearsals.
- Knowledge /Skills: (del) 1. DELETE: TPD
- Performance Step: 9. Inspect reconnaissance team.
- Knowledge /Skills: (del) 1. DELETE: TPD
- Performance Step: 10. Execute reconnaissance mission.
- Knowledge /Skills: (del) 1. KHT/BAT execute a patrol
 (b-g) 2. BAT complete form DA 1711-R (Engineer Reconnaissance Report)
 (b-g) 3. KHT/BAT identify all areas and points of engineer interest
 (e) 4. KHT/BAT identify decision points and named areas of interest
 (b-g) 5. KHT/BAT identify existing obstacles
 (b-g) 6. BAT identify engineer resources
 (a,b,c,e,f,g) 7. BAT evaluate urban/cultural structures
 (i) 8. KHT evaluate a river/stream
- Performance Step: 11. Submit reports.
- Knowledge /Skills: (b-i) 1. BAT complete form DA 1711-R (Engineer Reconnaissance Report)
 (f) 2. BAT complete form DA 1249 (Bridge Reconnaissance Report)
 (g) 3. BAT complete form DA 1250 (Tunnel Reconnaissance Report)
 (d) 4. BAT complete form DA 1251 (Ford Reconnaissance Report)
 (e) 5. BAT complete form DA 1252 (Ferry Reconnaissance Report)
 (b) 6. BAT complete form DA 1248 (Road Reconnaissance Report)
 (j) 7. BAT create a map overlay utilizing engineer reconnaissance symbols
 (j) 8. BAT identify appropriate staff section to submit reports
 (i) 9. BAT complete form DA 7396 (River Reconnaissance Report)
 (j) 10. KHT complete DA 1711 (Engineer Reconnaissance Report)
 (j) 11. KHT/BAT complete reconnaissance overlay



Date: 20151001

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-SURV-1001TASK BEHAVIOR: Design survivability positionsDATE OF LEARNING ANALYSIS: 20130910Performance Step: 1. Submit Requests for Information (RFI) to S/G-2.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct a METT-T analysis
 - (a) 2. KHT/BAT identify enemy threat weapons
 - (a) 3. KHT/BAT identify additional intelligence required
 - (del) 4. KHT/BAT submit RFIs to appropriate staff sections

Performance Step: 2. Determine types of positions required.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify survivability position categories
 - (a) 2. KHT/BAT identify other field fortification structures needed
 - (a) 3. KHT/BAT identify survivability position advantages and disadvantages
 - (a) 4. KHT/BAT determine the difference between a protective and a fighting position
 - (a,c) 5. KHT/BAT identify the effects of threat weapons

Performance Step: 3. Design positions.

- Knowledge /Skills:
- (c) 1. KHT/BAT identify the components of a survivability position
 - (c) 2. KHT/BAT determine the appropriate shielding material to counteract the effects of enemy fires
 - (a) 3. KHT/BAT design overhead cover to counteract the effects of enemy fires
 - (del) 4. KHT/BAT identify the purpose of an ECP
 - (del) 5. KHT/BAT identify the zones of an ECP
 - (del) 6. KHT/BAT layout/design an ECP to take advantage of existing terrain
 - (del) 7. KHT/BAT layout/design an ECP that will mitigate the effects of the enemy threat
 - (del) 8. HKO construction techniques

Performance Step: 4. Determine material requirements.

- Knowledge /Skills:
- (a,c) 1. KHT/BAT identify material available
 - (a,c) 2. KHT/BAT determine suitability of material/appropriate material
 - (c) 3. KHT/BAT determine the amount of shielding material required
 - (c) 4. KHT/BAT determine Class IV material required for survivability positions



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(s,c) 5. KHT/BAT utilize empirical data from tables and charts

Performance Step: 5. Determine personnel required for construction.

Knowledge /Skills: (b) 1. KHT/BAT determine MOS specialties needed
(b) 2. KHT/BAT determine required personnel for construction

Performance Step: 6. Determine equipment required.

Knowledge /Skills: (del) 1. HKO engineer tools and equipment
(b) 2. KHT/BAT determine equipment required

Performance Step: 7. Calculate the time required for construction.

Knowledge /Skills: (a,c,d) 1. KHT/BAT utilize empirical data from tables and charts
(del) 2. HKO construction techniques
(del) 3. HKO tools and equipment
(d) 4. KHT/BAT determine equipment hours required for construction
(d) 5. KHT/BAT determine manhours required for construction

Performance Step: 8. Submit designs/work estimates.

Knowledge /Skills: (d) 1. KHT/BAT determine the scope of work required
(b) 2. KHT/BAT identify personnel and equipment required
(c) 3. KHT/BAT calculate for a stringer roof
(a) 4. KHT/BAT graphically show desired survivability position
(del) 5. KHT/BAT graphically show the layout of the designed ECP



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-SURV-1002TASK BEHAVIOR: Plan construction of blast mitigation measuresDATE OF LEARNING ANALYSIS: 20110519Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. BAT analyze METT-T
 - (del) 2. BAT analyze the threat
 - (del) 3. BAT determine threat courses of action

Performance Step: 2. Assess the level of protection from varying threats to force protection.

- Knowledge /Skills:
- (a) 1. KHT/BAT determine the type of threat (forced entry, covert, stand-off weapon, explosive)
 - (del) 2. KHT/BAT analyze the threat
 - (c) 3. KHT/BAT identify blast mitigation measures available

Performance Step: 3. Estimate the specific effects on a structure with regard to enemy attack.

- Knowledge /Skills:
- (a) 1. KHT/BAT identify weapons effects
 - (a) 2. KHT/BAT determine weapons effects on structures
 - (a) 3. KHT/BAT determine possible damage to a structure due to a blast

Performance Step: 4. Recommend appropriate usage of structures depending on construction type and estimated threat.

- Knowledge /Skills:
- (a,b) 1. KHT/BAT identify structures that are more survivable in design
 - (del) 2. KHT/BAT identify enemy weapons effects on a position
 - (del) 3. KHT/BAT determine survivability requirements
 - (del) 4. BAT determine level of protection required based on enemy threat

Performance Step: 5. Recommend protective measures to harden against blast effects.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify enemy weapons effects on a position
 - (del) 2. KHT/BAT identify shielding materials to counter weapons effects
 - (del) 3. KHT/BAT design survivability positions to counter blast effects
 - (del) 4. KHT/BAT design survivability positions to counter fragmentation or round impact effects
 - (c) 5. KHT/BAT determine standoff required to mitigate blast effects
 - (c) 6. KHT/BAT determine proper location of blast walls to mitigate blast effects
 - (c) 7. KHT/BAT identify when propping is required



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(del) 8. KHT/BAT identify protective measures to mitigate threats

Performance Step: 6. Determine the required standoff to mitigate the effects of estimated threats.

- Knowledge /Skills:
- (c) 1. KHT/BAT calculate standoff using formulas
 - (c) 2. KHT/BAT calculate standoff using a scaled distance
 - (c) 3. KHT/BAT determine standoff using tables and charts

Performance Step: 7. Apply/recommend the elements of force protection to a proposed site.

- Knowledge /Skills:
- (c) 1. KHT/BAT determine the elements of security required in a force protection plan
 - (c) 2. KHT/BAT determine the level of protection required to counter the threat
 - (b) 3. BAT recommend survivable types of structures
 - (b) 4. BAT recommend existing site for occupation
 - (c) 5. BAT recommend standoff
 - (c) 6. BAT recommend building hardening
 - (c) 7. BAT recommend blast abatement
 - (c) 8. BAT recommend projectile abatement

Performance Step: 8. Coordinate as required with supported commander.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify appropriate staff sections
 - (del) 2. KHT/BAT submit required reports
 - (del) 3. KHT/BAT brief commander on blast mitigation measures
 - (del) 4. KHT/BAT submit requests for support as required

Performance Step: 9. Coordinate logistical support, as required.

- Knowledge /Skills:
- (del) 1. KHT/BAT determine support required
 - (del) 2. KHT/BAT identify adjacent engineer support available
 - (del) 3. KHT/BAT determine support from host nation available
 - (del) 4. KHT/BAT determine materials required for construction
 - (del) 5. KHT/BAT submit logistical and support requests to appropriate staff sections



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-SURV-1003

TASK BEHAVIOR: Prepare a survivability plan

DATE OF LEARNING ANALYSIS: 20110810

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. BAT analyze METT-T
 - (del) 2. BAT define the battlefield environment
 - (del) 3. BAT define battlefield effects
 - (del) 4. BAT analyze the threat
 - (del) 5. BAT determine threat courses of action
 - (del) 6. BAT identify additional intelligence required
 - (del) 7. BAT submit RFIs
 - (a) 8. KHT/BAT determine the protective effects of terrain
 - (b) 9. KHT/BAT identify survivability position types
 - (b) 10. KHT/BAT identify survivability position categories
 - (del) 11. KHT/BAT identify weapons effects
 - (c) 12. KHT/BAT identify shielding requirements to counter weapons effects
 - (del) 13. KHT/BAT determine position requirements by referring to tables and charts

Performance Step: 2. Identify location of survivability positions.

- Knowledge /Skills:
- (del) 1. BAT analyze METT-T
 - (del) 2. BAT analyze Commander Intent
 - (a) 3. BAT determine protective effects of terrain
 - (del) 4. BAT analyze the threat
 - (a,b) 5. BAT determine the locations for survivability position

Performance Step: 3. Coordinate with supported unit for coordinating instructions, security, and logistical support.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify appropriate staff sections
 - (del) 2. KHT/BAT submit required reports
 - (del) 3. KHT/BAT brief commander on the support plan
 - (del) 4. KHT/BAT determine support required
 - (del) 5. KHT/BAT identify adjacent engineer support available
 - (del) 6. KHT/BAT determine support from host nation available



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (del) 7. KHT/BAT identify security requirements
- (del) 8. KHT/BAT submit logistical and support requests to appropriate staff sections
- (del) 9. KHT/BAT determine materials required for construction

Performance Step: 4. Identify and prioritize survivability requirements.

- Knowledge /Skills:
- (b) 1. BAT determine protective requirements for a given TO/TE
 - (b) 2. BAT determine level of protection required based on enemy threat
 - (c) 3. BAT determine priority of survivability requirements
 - (c) 4. HKO commander's immediate threat analysis
 - (c) 5. BAT assist commander in PEPL analysis
 - (b) 6. KHT/BAT design survivability positions

Performance Step: 5. Plan for protective obstacle integration.

- Knowledge /Skills:
- (del) 1. BAT identify existing obstacles
 - (del) 2. BAT determine placement of reinforcing obstacles
 - (del) 3. BAT determine obstacle intent for reinforcing obstacles
 - (del) 4. BAT prioritize emplacement of reinforcing obstacles

Performance Step: 6. Task organize engineer equipment and personnel.

- Knowledge /Skills:
- (del) 1. BAT determine engineer equipment and personnel available
 - (c) 2. BAT prioritize survivability requirements
 - (del) 3. BAT allocate personnel and equipment to accomplish survivability
 - (del) 4. BAT determine logistical requirements for survivability positions

Performance Step: 7. Plan inspections of survivability positions.

- Knowledge /Skills:
- (b) 1. BAT identify proper construction techniques
 - (del) 2. BAT inspect survivability positions

Performance Step: 8. Prepare survivability appendix to operations order.

- Knowledge /Skills:
- (del) 1. BAT analyze METT-T
 - (del) 2. BAT conduct engineer IPB
 - (del) 3. BAT determine engineer mission requirements
 - (del) 4. BAT identify logistical requirements to S-4/G-4
 - (del) 5. BAT develop an engineer concept of operations
 - (del) 6. BAT develop an engineer appendix



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-SURV-1004

TASK BEHAVIOR: Plan construction of a entry access control point as a part of a protective barrier plan

DATE OF LEARNING ANALYSIS: 20121024

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (del) 2. KHT/BAT identify additional intelligence required
 - (del) 3. KHT/BAT submit RFIs
 - (del) 4. KHT/BAT determine the enemy threat
 - (del) 5. KHT/BAT determine reconnaissance requirements
 - (del) 6. KHT/BAT identify protection requirements
 - (a) 7. KHT/BAT identify the requirements of the Entry Control Point (ECP)

Performance Step: 2. Conduct a site reconnaissance.

- Knowledge /Skills:
- (del) 1. KHT perform engineer reconnaissance
 - (del) 2. BAT determine the effects of terrain and weather

Performance Step: 3. Determine expected levels of damage to existing structures from enemy bomb blasts.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify weapons effects
 - (del) 2. KHT/BAT determine weapons effects on structures
 - (del) 3. KHT/BAT determine possible damage to a structure due to a blast

Performance Step: 4. Develop obstacle/barrier plan (as required).

- Knowledge /Skills:
- (a) 1. KHT/BAT determine the type of threat (forced entry, covert, stand-off weapon, explosive)
 - (del) 2. KHT/BAT analyze the threat
 - (b) 3. KHT/BAT calculate standoff using formulas
 - (b) 4. KHT/BAT calculate standoff using a scaled distance
 - (b) 5. KHT/BAT determine standoff using tables and charts
 - (b) 6. KHT/BAT identify threat mitigation measures available if minimum standoff cannot be achieved

Performance Step: 5. Design entry point (provide vehicle holding areas, personnel holding areas, active vehicle barriers, electric lighting, and over-watch fighting positions).

- Knowledge /Skills:
- (a) 1. KHT/BAT identify the four functional zones of an Entry Control Point (ECP)



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (b) 2. KHT/BAT design an approach zone
- (b) 3. KHT/BAT design an access control zone
- (b) 4. KHT/BAT design a response zone
- (b) 5. KHT/BAT establish a safety zone
- (b) 6. KHT/BAT graphically show the layout of the Entry Control Point (ECP)
- (del) 7. KHT/BAT determine the equipment and materials required to construct the Entry Control Point (ECP)

Performance Step: 6. Develop Bill of Materials (BOM).

- Knowledge /Skills:
- (del) 1. KHT/BAT determine materials required for construction
 - (del) 2. KHT/BAT determine equipment required for construction

Performance Step: 7. Determine task organization of personnel and equipment.

- Knowledge /Skills:
- (del) 1. DELETE: Covered in 1302-SURV-1001



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-SURV-1005

TASK BEHAVIOR: Plan building hardening

DATE OF LEARNING ANALYSIS: 20111111

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (del) 1. KHT/BAT analyze METT-T
 - (del) 2. KHT/BAT conduct Intelligence Preparation of the Battlefield (IPB)
 - (del) 3. KHT/BAT identify Requests for Information (RFI) to the S-2/G-2
 - (del) 4. KHT/BAT conduct engineer reconnaissance as required
 - (del) 5. KHT/BAT identify units requiring engineer support

Performance Step: 2. Recommend appropriate structures for survivability positions (according to construction type, threat weapons, and available materials/time).

- Knowledge /Skills:
- (a) 1. KHT/BAT identify types of structures (below ground/above ground, frameless/framed)
 - (del) 2. KHT/BAT identify shielding material requirements
 - (a) 3. BAT identify structures that are more survivable in design

Performance Step: 3. Estimate specific effects on a structure of enemy direct and indirect fire weapons.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify enemy weapons effects on a position

Performance Step: 4. Plan protective measures to harden buildings against weapon effects.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify shielding materials to counter weapons effects
 - (del) 2. KHT/BAT design survivability positions to counter blast effects
 - (del) 3. KHT/BAT design survivability positions to counter fragmentation or projectile impact effects

Performance Step: 5. Plan for additional structural support (allow for additional load of protective materials to prevent progressive collapse of an existing structure).

- Knowledge /Skills:
- (b) 1. KHT/BAT state the purpose of propping
 - (b) 2. KHT/BAT identify when propping is required
 - (b) 3. KHT/BAT estimate materials for propping
 - (b) 4. KHT/BAT properly place propping

Performance Step: 6. Plan fighting positions within an existing structure (allow for employment of infantry weapons from within an enclosed space).

- Knowledge /Skills:
- (a) 1. KHT/BAT identify requirements for an urban position



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (c) 2. KHT/BAT prepare a building for positions
- (del) 3. KHT/BAT coordinate with supported unit if required
- (del) 4. KHT/BAT determine position requirements by referring to tables and charts

Performance Step: 7. Plan above ground fighting positions and shelters.

- Knowledge /Skills:
- (del) 1. KHT/BAT determine survivability requirements
 - (del) 2. KHT/BAT advise commander on survivability options
 - (del) 3. KHT/BAT design survivability positions to counter blast effects
 - (del) 4. KHT/BAT design survivability positions to counter fragmentation or projectile impact effects
 - (del) 5. KHT/BAT identify shielding materials to counter weapons effects

Performance Step: 8. Integrate supporting agencies into fire prevention and firefighting plan.

- Knowledge /Skills:
- (c) 1. KHT/BAT identify fire fighting equipment
 - (c) 2. KHT/BAT position fire fighting equipment
 - (del) 3. KHT/BAT conduct an operational risk assessment
 - (del) 4. KHT/BAT establish controls to mitigate risks

Performance Step: 9. Plan coordination of survivability/ countermobility plan with supported unit.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify appropriate staff sections
 - (del) 2. KHT/BAT submit required reports
 - (del) 3. KHT/BAT brief commander on the survivability plan
 - (del) 4. KHT/BAT determine support required
 - (del) 5. KHT/BAT identify adjacent engineer support available
 - (del) 6. KHT/BAT determine support from host nation available
 - (del) 7. KHT/BAT identify security requirements
 - (del) 8. KHT/BAT submit requests for support as required

Performance Step: 10. Develop a countermobility plan that supports the commander's intent (disrupt, fix, turn, block).

- Knowledge /Skills:
- (a) 1. KHT/BAT identify possible points of entry to a structure
 - (del) 2. KHT/BAT emplace obstacles to block entry to a structure
 - (del) 3. BAT determine equipment and materials required to construct protective obstacles

Performance Step: 11. Correct deficiencies.

- Knowledge /Skills:
- (del) 1. KHT/BAT conduct inspections



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

(del) 2. KHT/BAT identify repair/improvement requirements

Performance Step: 12. Plan modification of positions/obstacles to provide better support to supported units as required.

Knowledge /Skills: (del) 1. KHT/BAT identify repair/improvement priorities

(del) 2. KHT/BAT organize repair/improvement crews

COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

TASK: 1302-VERT-1001

TASK BEHAVIOR: Plan a vertical construction project

DATE OF LEARNING ANALYSIS: 20130920

Performance Step: 1. Conduct mission analysis.

- Knowledge /Skills:
- (a) 1. KHT read blueprints
 - (a) 2. KHT analyze job specifications
 - (del) 3. KHT/BAT analyze METT-T
 - (del) 4. KHT/BAT identify the S-2
 - (del) 5. KHT/BAT submit RFIs
 - (del) 6. KHT/BAT determine reconnaissance requirements
 - (del) 7. HKO the Advanced Base Functional Components (ABFC)
 - (del) 8. HKO the Theater Construction Management System (TCMS)
 - (del) 9. KHT/BAT identify additional intelligence required
 - (b) 10. KHT identify wood frame structure components

Performance Step: 2. Conduct site reconnaissance.

- Knowledge /Skills:
- (del) 1. KHT perform engineer reconnaissance
 - (a) 2. KHT perform terrain analysis
 - (a) 3. KHT select adequate sites
 - (c) 4. KHT layout a building
 - (c) 5. KHT square corners
 - (c) 6. KHT erect batter boards
 - (c) 7. KHT prepare terrain
 - (c) 8. KHT level terrain
 - (c) 9. KHT establish building lines
 - (del) 10. KHT perform field identification of soils
 - (del) 11. KHT evaluate terrain

Performance Step: 3. Determine soil stabilization requirements.

- Knowledge /Skills:
- (del) 1. KHT conduct field identification of soils
 - (c) 2. KHT prepare terrain
 - (c) 3. HKO well graded material
 - (c) 4. HKO frostline



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

Performance Step: 4. Determine drainage requirements.

- Knowledge /Skills:
- (del) 1. HKO site condition
 - (del) 2. KHT design drainage
 - (c) 3. KHT level terrain

Performance Step: 5. Develop bill of materials (BOM).

- Knowledge /Skills:
- (b) 1. KHT identify structural components
 - (del) 2. KHT perform mathematical conversions
 - (a) 3. KHT read blueprints
 - (d) 4. KHT design temporary facilities
 - (d) 5. KHT calculate material for building components
 - (d) 6. KHT calculate material for foundations
 - (d) 7. KHT calculate material for sub-floor components
 - (d) 8. KHT calculate material for wall components
 - (d) 9. KHT calculate material for roofing components
 - (d) 10. KHT calculate material for stair components
 - (e) 11. KHT calculate fasteners
 - (del) 12. KHT calculate material for finishing
 - (a,d) 13. HKO construction standards
 - (d,e) 14. KHT calculate square footage of sheathing
 - (d,e) 15. KHT determine economical order length
 - (e) 16. KHT determine material take-off lists
 - (d,e) 17. KHT calculate board feet
 - (d,e) 18. KHT calculate linear feet

Performance Step: 6. Determine logistical requirements.

- Knowledge /Skills:
- (a) 1. KHT read blueprints
 - (g) 2. KHT determine necessary engineer equipment
 - (del) 3. KHT estimate production rates
 - (del) 4. KHT evaluate Heavy Equipment capabilities
 - (del) 5. KHT calculate earthwork volumes
 - (del) 6. KHT determine Motor Transportation assets
 - (del) 7. KHT determine utilities assets
 - (del) 8. KHT determine POL/fuel assets



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (d,e) 9. KHT calculate board feet
- (e) 10. KHT determine material take-off lists
- (e) 11. KHT determine BOM
- (del) 12. KHT/BAT solve mathematical equations
- (g) 13. KHT/BAT select equipment for land clearing operations
- (f) 14. BAT determine a consolidated materials sheet

Performance Step: 7. Establish a safety plan.

- Knowledge /Skills:
- (del) 1. KHT employ operational risk management (ORM)
 - (del) 2. KHT set up an ORM matrix

Performance Step: 8. Establish quality control program.

- Knowledge /Skills:
- (del) 1. KHT employ CPM (Task 1302-XENG-1003 Establish project/operation schedules)
 - (del) 2. HKO quality control equipment
 - (del) 3. BAT follow accepted construction techniques
 - (a) 4. KHT identify job specifications
 - (del) 5. KHT/BAT conduct repair/maintenance inspections
 - (del) 6. BAT conduct inspections
 - (del) 7. KHT/BAT organize repair crews

Performance Step: 9. Coordinate as required with supported commander.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify appropriate staff sections
 - (del) 2. KHT/BAT submit required reports
 - (del) 3. KHT/BAT submit requests
 - (del) 4. KHT/BAT brief commander on the construction plan

Performance Step: 10. Illustrate final design/design blueprints.

- Knowledge /Skills:
- (del) 1. KHT prepare design drawings (blueprints)
 - (del) 2. KHT employ Auto-CAD

Performance Step: 11. Coordinate logistical support, as required.

- Knowledge /Skills:
- (del) 1. KHT/BAT determine support required
 - (del) 2. KHT/BAT identify adjacent engineer support available
 - (del) 3. KHT/BAT determine support from host nation available
 - (del) 4. KHT/BAT submit logistical support requests to appropriate staff sections
 - (e) 5. KHT complete a Material Take-off Sheet



COMBAT ENGINEER OFFICER (WORKING)

LEARNING ANALYSIS WORKSHEET (LAW)

- (e) 6. KHT complete a Bill of Materials (BOM)
- (f) 7. KHT complete a Consolidated Shopping List

Performance Step: 12. Coordinate security measures, as required.

- Knowledge /Skills:
- (del) 1. KHT/BAT identify security requirements
 - (del) 2. KHT/BAT submit requests for support as required

