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This **Handbook** is designed to assist **Infantry Leaders** in synchronization of battle effects in time, space and purpose. It provides useful planning factors and considerations for each combat function. The focus is at maneuver Task Force and Brigade level operations. Each of the BOS representatives in your unit should be able to provide more specific information.

BATTLEFIELD OPERATING SYSTEMS **SECTION**

BATTLE COMMAND

(INCLUDING SIGNAL)

- TROOP LEADING PROCEDURES
- MILITARY DECISION MAKING PROCESS
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- OPERATIONS OTHER THAN WAR UNIQUE CONSIDERATIONS
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- SIGNAL PLANNING CONSIDERATIONS
- SINCGARS
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TROOP LEADING PROCEDURES

(FM 7-10, CHANGE 1)

Mission analysis begins

- **Receive the Mission**
  - Given or Determine the Mission
  - Analyze available time, Develop planning timeline
  - Assess other METT-T Factors & Situation – time permitting
  - Begin assessing CCIR
  - Prepare Company Warning Order
- **Issue a Warning Order**
  - Warning Order contains Company Mission, Timeline & other information or instructions as deemed necessary by the Company Commander
  - Issued as immediately as possible
  - Issue other Warning Orders as necessary throughout the TLP
- **Make a Tentative Plan**
  - Mission Analysis continues in as much depth and detail as the situation and time permit
  - At conclusion of Mission Analysis, develop CDR's Intent and determine decisive point
  - Develop COAs
    - Given the Situation & Mission, assess doctrinal requirements
    - In light of your commander's intent, focus at the decisive point, determine purposes of main & supporting efforts
    - Determine tasks of main & supporting efforts
    - Array initial forces
    - Develop scheme of maneuver
    - Prepare COA sketch & statement
  - COA Analysis (war game)
    - Select Technique
    - Done to detail required by situation
    - Record results, clarify Decisive Point
    - List advantages/disadvantages
    - Remain unbiased

Mission Analysis

- **Review, receive or deduce mission**
- **Analyze time; develop/refine timeline**
- **Review or analyze higher HQ's order**
- **Assess & analyze terrain, enemy**
- **Assess & analyze troops available & in support**
- **Determine Constraints**
- **Review facts & assumptions**
- **Review/update CCIR**
- **Assess, refine or develop CDR's intent & decisive point**

  - COA Comparison (if more than one COA developed)
    - Determine evaluation criteria
    - Do comparison of COA
  - COA Selection
    - Clarify commander's intent
    - Refine CS & CSS requirements for the selected COA
    - Clarify your CCIR to support Selected COA
    - Develop reconnaissance plan based on PIR
    - Prepare order to initiate movement
    - Issue Warning Order
- **Initiate Movement**
  - Issue movement order
  - Continue mission preparation
- **Conduct Reconnaissance**
  - Complete coordination necessary for reconnaissance
  - Issue reconnaissance order
  - Complete reconnaissance
  - Based on CCIR, complete coordination with Battalion
- **Complete the Plan**
  - Adjust & refine COA details based on reconnaissance (or adopt alternative COA, as necessary) to include redoing the COA analysis if necessary
  - Prepare OPORD notes & OPORD Briefing site (sand table, terrain model, sketch, target list/overlay)
  - Conduct or update Risk Assessment
- **Issue the Order**
- **Supervise**

An ongoing process that never "ends". It is central to the decision making cycle

BACK

MILITARY DECISION MAKING PROCESS

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Mission	**Mission**	**COA**	**COA**	**COA**	**COA**	**Produce**
Receipt	**Analysis**	**Development**	**Analysis**	**Comparison**	**Approval**	**Orders**
	1. Analyze higher order.	1. Analyze relative cbt pwr.	1. Gather the tools.	1. Post criteria matrix.		1. SITUATION
	2. IPB.	2. Generate options.	2. List friendly forces.	2. Weight criteria.		a. Enemy forces.
	-Define the battlefield.	-Suitable.	3. Assumptions.	3. Evaluate COA strengths		b. Friendly forces.
	-Describe battlefield effects.	-Feasible.	4. Critical events & DPs.	& weaknesses.		c. Attachments/detach.
	-Evaluate the threat.	-Acceptable.	5. Evaluation criteria.	4. Consider estimates.		d. Assumptions.
	-Develop threat COAs.	-Distinguishable.	6. Select wargame method.			2. MISSION
	3. Specified, implied & essential tasks.	-Complete.	-Avenue.	Staff estimates:		3. EXECUTION
	4. Review available assets.	3. Array forces.	-Belt.	1- Mission.		Intent:
	5. Determine constraints.	4. Develop scheme of maneuver.	-Box.	2- Situation & considerations		a. Concept of opns.
	6. Identify critical facts & assumptions.	-Purpose.	7. Select recording method.	3- COA analysis.		(1) Maneuver.
Component	7. Conduct risk assessment.	-Risk.	-Narrative.	-Requirements.		(2) Fires.
Steps	8. Determine initial CCIR	-Critical events.	-Sketch.	-Capabilities.		b. Tasks to mvr units.
	PIR, EEFI, & FFIR.	-Purpose of ME.	-Sync matrix.	-Shortfalls.		c. Tasks to CS units.
	9. Prepare initial recon annex.	-Purpose of SE.	-Execution checklist.	-Recommendations.		d. Coordinating instr.
	10. Plan use of available time.	-Purpose of reserve.	8. Wargame.	4- Comparison.		4. SERVICE SUPPORT
	11. Write the restated mission.	-Deep, close, rear.	9. Assess results.	5- Conclusions &		5. COMMAND & SIGNAL
	12. Mission analysis briefing.	-Responsibilities, graphics.		recommendations.		
	13. Restated mission approved.	5. Assign headquarters.				Annexes:
	14. Commander's intent.	6. Prepare COA statement				A - Task Organization
	15. Commander's guidance.	& sketch.				B - Intelligence
	16. Issue warning order.					C - Operation Overlay
	17. Review facts & assumptions.					D - Fire Support
	1. Mission & intent two levels up.	1. IPB update.	1. Higher's mission, intent &	1. Higher's mission & intent two		E - ROE
	2. Mission, intent & concept of higher.	2. SITEMPs.	deception.	levels up.		F - Engineer
	3. Commander's guidance.	3. Restated mission.	2. Updated IPB.	2. Restated mission.		G - Air Defense
	4. IPB products.	4. Mission & intent two levels up.	3. COAs wargamed.	3. Status of forces.		H - Signal
	5. Specified, implied & essential tasks.	5. COA statements & sketches.	4. Assumptions.	4. Updated IPB.		I - Service Support
Briefing	6. Constraints.	6. COA rationale.	5. Techniques used.	5. Each COA:		J - NBC
Format	7. Forces available.		6. For each COA:	-Assumptions.		K - Provost Marshal
	8. Hazards and their risk.		-Critical events.	-Effects on staff estimates.		L - R&S
	9. Recommended initial CCIR.		-Actions/reactions.	-Advantages/disadvantages.		M - Deep Operations
	10. Recommended timeline.		-Pro & cons.	-Risk.		N - Rear Operations
	11. Proposed restated mission.			6. Recommended COA.		O - AC^2
	1. SITEMP/event template.	1. COA statements & sketches.	1. Refined/detailed COA &	1. Complete staff estimates.	1. Approved COA.	P - C^3W
	2. Restated mission.	2. SITEMPs.	sync matrix.		2. Cdr's guidance.	Q - OPSEC
	3. Commander's intent.		2. Location & timing of cbt		3. Warning order.	R - PSYOP
	4. Commander's guidance.		pwr at decisive point.			S - Deception
	-Friendly/enemy COAs.		3. Detailed task org.			T - EW
	-CCIR.		4. Refined event template.			U - CMO
Products	-Recon guidance & deception.		5. CCIR & collection plan.			V - Public affairs
	-CS/CSS priorities.		6. Concepts for fires, engr			
	-Timeline & type order/rehearsal.		& support.			
	5. Warning order.		7. Subordinate tasks.			
	-Mission, intent, CCIR, timeline, mvt.		8. Deception.			
	-Priorities, OPORD, rehearsal.		9. Risk.			

BACK

RELATIVE COMBAT POWER ANALYSIS

Maneuver effect.

(1)*Unit mobility*:
- Physical fitness.
- Teamwork and esprit.
- Equipment capabilities.
- Equipment maintenance.
- Mobility.
- Tempo and speed.

(2)*Tactical analysis:*
- Intelligence and knowledge of enemy tactics.
- Understanding of terrain effects.
- Understanding of own capabilities.

(3)*Management of resources:*
- Utilization of equipment
- Utilization of supplies.
- Utilization of time.
- Utilization of soldiers' energy.

(4)*Command, control, and communications:*
- Span of control.
- SOPs and doctrine.
- Staff efficiency.
- Communications efficiency.

Firepower effect.

(1)*Volume of fire:*
- Number of delivery means.
- Supply capability.
- Rate of fire of weapon systems.

(2)*Lethality of munitions:*
- Design characteristics.
- Explosive energy.
- Penetration.

(3)*Accuracy of fires:*
- Weapon and ammo design characteristics.
- Crew proficiency.
- Terrain effects.
- Visibility.

(4)*Target acquisition:*
- Intelligence and analysis.
- Location & function of forward observers & observation pts.
- Transmission of target data.

(5)Flexibility of employment:
- Weapons ranges.
- Mobility.
- Fire control systems.
- Tactical employment doctrine.
- Set up to fire time.

Protection effect.

(1)*Concealment:*
•Camouflage.
•Stealth.
•Equipment design.
•Enemy intelligence acquisition means.
•Our acquisition & tracking means.

(2)*Exposure limitation:*
•Minimize potential target size.
•Minimize potential target exposure time.
•Complicate potential target tracking.

(3)*Damage limitation:*
•Individual protective equipment design and use.
•Use of natural cover.
•Use of artificial cover.
•Combat vehicle design.
•Medical treatment & evacuation system.
•Equipment repair & cannibalization.
•Alternate C^2 arrangements.
•Personnel replacements.
•Equipment replacements.

Leadership effect.

(1)*Technical proficiency:*
- Training.
- Experience.

(2)*Understanding of unit capabilities:*
- Training.
- Experience.
- Selection.

(3)*Communication skills*
- Selection.
- Training.
- Written, oral, and graphics.
- Subunit teamwork.

(4)*Dedication, commitment, moral:*
- Motivation.
- Training.
- Recent success or failure in combat.

(5)U*nderstanding:*
- Combat experience.
- Training.
- Luck.

COMMANDER'S INTENT

The commander's intent is a clear, concise statement of what the force must do to succeed with respect to the enemy and the terrain and to the desired end state. It provides the link between the mission and the concept of the operations by stating the key tasks that, along with the mission, are the basis for subordinates to exercise initiative when unanticipated opportunities arise or when the original concept of the operation no longer applies. Intent is normally expressed in four or five sentences and is mandatory for all orders. The mission and the commander's intent must be understood two echelons down.

Key tasks are those that must be performed by the force, or conditions that must be met, to achieve the stated purpose of the operation. Key tasks are not tied to a specific course of action, rather they identify that which is fundamental to the force's success. The operations' tempo, duration, and effect on the enemy, and terrain that must be controlled, are examples of key tasks.

FM 101-5, p 5-9

SAMPLE COMMANDER'S INTENT

- prevent the enemy from gaining access to HWY 431 and HWY 165
- prevent MRBs from conducting mutually supporting attacks in our AO
- prevent bridgeheads from being established on the Chattahoochee River

BACK

WARNING ORDER

WARNING ORDERS GIVE SUBORDINATES ADVANCE NOTICE OF OPERATIONS THAT ALLOWING THEM TIME TO PREPARE. THE ORDER SHOULD BE BRIEF BUT COMPLETE. A SAMPLE FORMAT FOLLOWS:

- SITUATION. (INCLUDE ALL THAT IS KNOWN ABOUT THE ENEMY AND FRIENDLY SITUATIONS INCLUDING ATTACHMENTS AND DETACHMENTS.)
- MISSION. (INCLUDE TASK AND PURPOSE AND ANSWER THE 5 W'S – WHO, WHAT, WHERE, WHEN, WHY)
- EXECUTION.

  INTENT – MAY CHANGE AS YOU CONTINUE THE TLP.
  - CONCEPT OF OPERATIONS.
  - TASKS TO MANEUVER. (Include anything that you need subordinates to do before the next Warning Order)
  - TASKS TO COMBAT SUPPORT.
  - COORDINATING INSTRUCTIONS.
    - UNIFORM AND EQUIPMENT COMMON TO ALL
    - SPECIAL WEAPONS, AMMUNITION OR EQUIPMENT
    - TENTATIVE TIME SCHEDULE. (BASED ON MISSION ANALYSIS)
      - EARLIEST TIME OF MOVE
      - TIME AND PLACE OF OPORD
      - PROBABLE EXECUTION TIME
      - INSPECTION TIMES
      - REHEARSAL TIMES AND ACTIONS TO BE REHEARSED (E.G. ACTIONS AT OBJ, BREACH, REACT TO CONTACT, OTHERS AS TIME ALLOWS)
    - ADDITIONAL GENERAL INSTRUCTIONS AS NEEDED OR BY SOP.
    - SPECIAL INSTRUCTIONS TO SUBORDINATE LEADERS –
      - EXECUTIVE OFFICER
      - FIRST SERGEANT
      - FIRE SUPPORT OFFICER
      - PLATOON LEADERS
      - SECTION SERGEANTS
      - ATTACHMENTS

ACKNOWLEDGE

BACK

RECON PLAN FORMAT (SAMPLE)

RECON PLAN REQUIREMENTS (MINIMUM)

- Composition/task organization of recon element.
- Where you are going.
- Key facts to be gained on the recon.
- Actions upon reaching the recon site.
- Movement routes/formations to be used to the site.
- Special instructions to members of the recon element.
- Special instructions to unit that is to stay or join later.
- Special equipment for the recon.
- Contingency plans.
- Plan for stay behind surveillance.
- Indirect fire support for the recon.
- Communications plan.
- Withdrawal plan from recon site or go to ground.
- Intelligence update or disseminate information.

CONDUCT OF THE RECON

- Establish security.
- Conduct recon to confirm or deny all or parts of the tentative plan.
- Be prepared to recall all or parts of the other COA(s) not selected if the tentative plan needs to be adjusted due to the nature of the terrain.
- Mark sites for key weapon systems, TRPs, obstacles.
- Test communications if necessary.
- Continue fire support planning.
- Serve as guides for main body.

EXECUTION MATRIX (EXAMPLE)

EXECUTION MATRIX: SHOWS THE MOST CRITICAL TASKS OR EVENTS IN MATRIX FORMAT. THE MATRIX IS USED TO HELP THE COMMANDER DURING THE CONDUCT OF THE MISSION AS WELL AS TO SUPPLEMENT THE OPERATION OVERLAY AND THE ORAL ORDER. THE EXECUTION MATRIX DOES NOT REPLACE THE MISSION-TYPE ORDER THAT THE COMMANDER GIVES HIS SUBORDINATE; IT ASSISTS THEIR UNDERSTANDING OF THE MISSION.

USEFUL VARIATIONS TO THE BASIC MATRIX INCLUDE INTEGRATING OPERATION SCHEDULES, BREVITY CODES, OR SIGNALS INTO THE MATRIX SO THAT A SERIES OF SYNCHRONIZED EVENTS CAN BE ORDERED BY SHORT RADIO COMMANDS OR SIGNALS. IN THE DEFENSE, A PRIORITY OF WORK AND DESIGNATED POSITIONS COULD BE ADDED. FINALLY, AN EXECUTION MATRIX IS AN EXCELLENT WAY TO PREPARE CONTINGENCY OR COUNTERATTACK PLANS.

PROMPTS FOR POSSIBLE ELEMENTS/PHASES TO BE ISSUED IN THE MATRIX ARE:

ELEMENTS: ORGANIC, ATTACHED, HEADQUARTERS, FIRE SUPPORT, ANTIARMOR, MORTARS.

PHASES: MOVEMENT TO LD, CROSSINGS, PHASE LINES, ASSAULT POSITION, ACTION ON OBJECTIVE, CONSOLIDATION, COUNTERATTACK, CONTINGENCY PLANS.

PHASES ELEMENTS	AA TO LD	PL BLUE	ASSLT POSN	ACTIONS ON OBJECTIVE	CONSOLIDATE REORGANIZATION	CONTINGENCY PLAN 1	CONTINGENCY PLAN 2
1ST PLT	ORDER OF MARCH: 2	AXIS GOLD TM	MOVE BREACH FORWARD	BREACH SUPPORT BP1	300-130		
2ND PLT	3	AXIS LEAD SBF 2	TRP1-TRP2		130-240 BP2		
3RD PLT	4	AXIS LEAD	TRP2-TRP3 SBF 1	TRP3-TRP5 SBF1	240-300 BP3		
TANK PLT	1	AXIS GOLD		ASSAULT	RESERVE		
ANTIARMOR SECTION	5	AXIS ROCK	TRP4-TRP5 SBF 3		100 BP4		
MORTARS	AZ OF LAY 1000 POSN1	1400 POSN2	1300 POSN3	1700 POSN3	3300 POSN4		
FSO	CFL LD	CFL PL BLUE	GRP A1C		REGISTER FPF		
HQ	XO WILL MAN PP1	AXIS GOLD	SBF3		CP ON OBJECTIVE		

BACK

EXECUTION MATRIX (BLANK)

EVENT / UNIT						
1ST PLT						
2ND PLT						
3RD PLT						
AT SECTION						
FIRES 60 MM						
FIRES 81 MM						
FIRES 105 MM						
CSS						
C2						

BACK

SYNCHRONIZATION MATRIX

TIME						
ENEMY COA						
BATTLEFIELD OPERATING SYSTEMS	INTL	NAI				
		TAI				
		COL				
	MANEUVER	SEC				
		MBA				
		RES				
		REAR				
		DEEP				
	FIRE SUPPORT	MORT				
		(DS)				
		(R)				
		AIR				
	MOB CM SURV	EQUIP				
		PERS				
	ADA	SGR				
		VUL				
	C2	MAIN CP				
		CMD GP				
	CSS	ARM				
		FUEL				
		FIX				
DECEPTION						
DECISION POINTS		CO				
		BN				
		BDE				
KEY ACTIVITIES AND COMPUTATIONS						

BACK

COMMAND & SUPPORT RELATIONSHIPS

COMMAND RELATIONSHIPS

Organic - TO&E or TDA.

Assigned - Placed in an organization on a permanent basis for its primary function. Controlled and administered by unit to which assigned.

Attached - Placed in an organization on a temporary basis. Controlled by and logistically supported by unit attached to. UCMJ/Administrative normally retained by unit of assignment.

Operational Control (OPCON) - Unit provided to another commander to accomplish specific missions or tasks. Administrative and logistical support from assigned unit. OPCON does not include UCMJ, administrative or logistic responsibility

.

SUPPORT RELATIONSHIPS

Direct Support (DS) - A unit in DS is required to give priority of support to the supported unit. A unit in DS has no command relationship with the supported force.

General Support (GS) - Provide support to the total force.

General Support Reinforcing (GSR) - Primarily used with artillery units. Unit is required to support the force as a whole and to provide reinforcing fires to another artillery unit as a second priority.

BACK

COMMAND & SUPPORT RELATIONSHIPS

RELATIONSHIPS		INHERENT RESPONSIBILITIES							
		Has Command Relation-ship With	May Be Task Organized By	Receives Logistic Support From	Is Positioned By	Provides Liaison	Establishes/maintains Communications With	Has Priorities Established By	Gaining Unit Can Further Impose Command Relationships Of
COMMAND	**Attached**	Gaining Unit	Gaining Unit	Gaining Unit	Gaining Unit	As Required By Unit To Which Attached	Unit To Which Attached	Gaining Unit	Attached, OPCON, TACON, GS,GSR,R, DS
	OPCON	Gaining Unit	Gaining Unit	Parent Unit	Gaining Unit	As Required By Unit To Which OPCON	Parent Unit And Unit To Which OPCON	Gaining Unit	OPCON, TACON, GS,GSR,R, DS
	TACON	Gaining Unit	Parent Unit	Parent Unit	Gaining Unit (Maneuver)	As Required By Unit To Which TACON	Parent Unit And Unit Having TACON	Gaining Unit	GS,GSR,R, DS
SUPPORT	**GS**	Parent Unit	Parent Unit	Parent Unit	Parent Unit	As Required By Parent Unit	Parent Unit	Parent Unit	NA
	GSR	Parent Unit	Parent Unit	Parent Unit	Parent Unit	As Required By Parent & Reinforced Unit	Parent & Reinforced Unit	Parent Unit	NA
	R	Parent Unit	Parent Unit	Parent Unit	Reinforced Unit	Parent Unit	Parent & Reinforced Unit	Parent Unit	NA
	DS	Parent Unit	Parent Unit	Parent Unit	Supported Unit	Parent Unit	Parent & Reinforced Unit	Parent Unit	NA

BACK

CONCEPT PARAGRAPH (EXAMPLE)

EXAMPLE 1

FORM OF MANEUVER OR TYPE OF DEFENSE - We will accomplish this by conducting an ***envelopment*** of OBJ Bull.

DECISIVE POINT & MAIN EFFORT - The decisive point is seizing the high ground on OBJ Horns, which will allow us to control Pike Road. One platoon, the main effort, ***seizes*** OBJ Horns to allow passage of 52 ID (M) along Pike Road.

SUPPORTING EFFORTS - One platoon, (SE#1) ***seizes*** OBJ Tail to prevent the concentration of combat power against the CO ME.

One platoon(SE#2) will ***breach*** to allow the passage of SE#1 and the ME onto the OBJ.

CONCEPT OF FIRES - The purpose of indirect fires is to isolate OBJ Bull.

CONCEPT OF CRITICAL BOS ASSETS - The purpose of engineering is to provide mobility support along Pike Road.

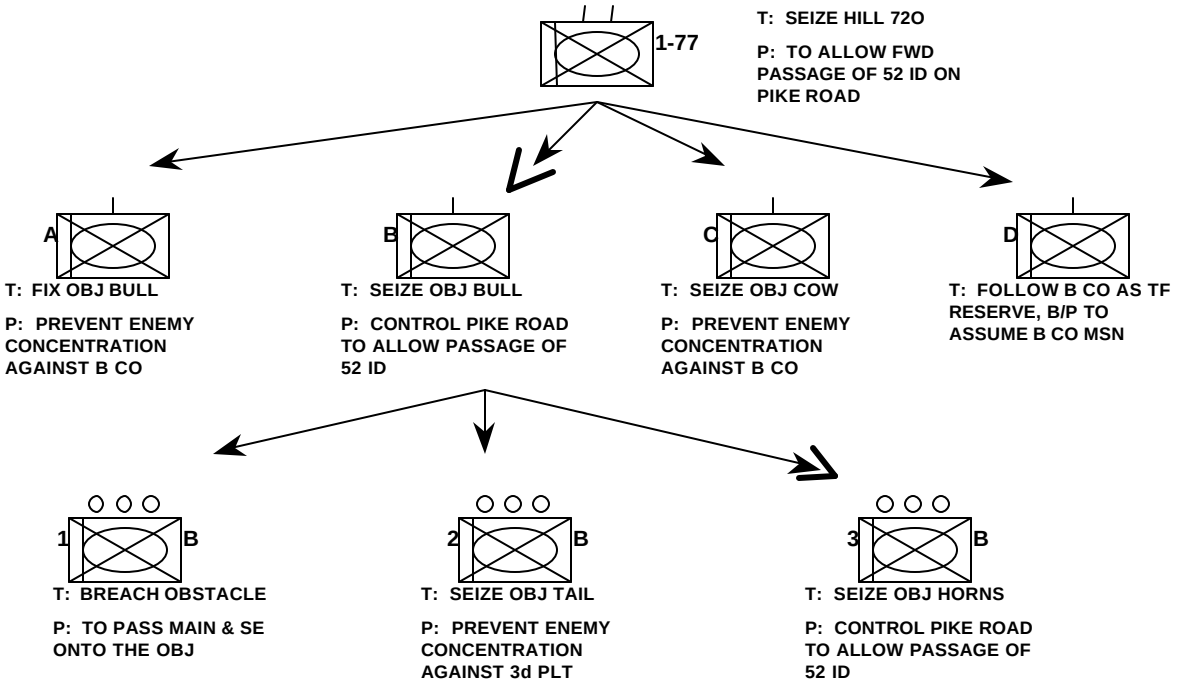
ENDSTATE - The endstate of this operation is the company defending from PLT BPs 1,2 & 3, all enemy anti-armor systems cleared in zone, and the company prepared to pass the 52 ID (M).

EXAMPLE 2

We will accomplish this by conducting an ***envelopment*** of OBJ Bull. The decisive point is seizing the high ground on OBJ Horns, which will allow us to control Pike Road. 1st Platoon, the main effort, attacks NLT 17 0600 OCT 99 to ***seize*** OBJ Horns to allow passage of 52 ID (M) along Pike Road. 2nd Platoon, attacks NLT 17 0530 OCT 99 to ***seize*** OBJ Tail to prevent the concentration of combat power against 1st Platoon. 3rd platoon ***breaches*** enemy protective obstacles NLT 17 0520 OCT 99 to allow the passage of 1st and 2nd Platoons onto the OBJ. We will employ indirect fires is to isolate OBJ Bull. The purpose of engineering is to provide mobility support along Pike Road. At the conclusion of this attack the company will be defending from PLT BPs 1,2 & 3, with all enemy anti-armor systems cleared in zone, and the company prepared to pass the 52 ID (M).

BACK

TASK & PURPOSE TREE (EXAMPLE)



BACK

OPERATIONS OTHER THAN WAR
PRINCIPLES

PERSEVERANCE - PREPARE FOR THE MEASURED, PROTRACTED APPLICATION OF MILITARY CAPABILITY IN SUPPORT OF STRATEGIC AIMS.

RESTRAINT AND ROE - APPLY APPROPRIATE MILITARY CAPABILITY PRUDENTLY.

SECURITY - NEVER PERMIT HOSTILE FACTIONS TO ACQUIRE AN UNEXPECTED ADVANTAGE

OBJECTIVE- DIRECT EVERY MILITARY OPERATION TOWARD A CLEARLY DEFINED, DECISIVE, AND ATTAINABLE OBJECTIVE

UNITY OF EFFORT - SEEK UNITY OF EFFORT TOWARD EVERY OBJECTIVE.

LEGITIMACY - SUSTAIN THE WILLING ACCEPTANCE BY THE PEOPLE OF THE RIGHT OF THE GOVERNMENT TO GOVERN OR OF A GROUP OR AGENCY TO MAKE AND CARRY OUT DECISIONS.

FM 100-5 (JUN 93)

BACK

OPERATIONS OTHER THAN WAR
UNIQUE CONSIDERATIONS

RULES OF ENGAGEMENT
- *PRESCRIBED BY HIGHER HEADQUARTERS*
- *GUIDELINES THAT REQUIRE JUDGMENT*
- *MAY CHANGE FREQUENTLY*
- *MUST BE UNDERSTOOD BY ALL SOLDIERS - TRAIN USING ROE DILEMMAS AND VIGNETTES*

POLITICAL DOMINANCE:
- *MILITARY FORCES HELP ACHIEVE POLITICAL GOALS*

OTHER AGENCIES:
- *JOINT AND COMBINED OPERATIONS*
- *CIVILIAN AGENCY INTERACTION*
- *EXTENSIVE LIAISON REQUIREMENT*

INTELLIGENCE PREPARATION OF THE BATTLEFIELD (IPB):
- *DIFFICULTY IN IDENTIFYING THE THREAT*
- *LACK OF A THREAT DATA BASE*
- *SEE FM 34-130, CH. 6 FOR SPECIFIC IPB CONSIDERATIONS FOR EACH OOTW ACTIVITIES*

FORCE SUSTAINMENT:
- *EXTREMELY AUSTERE ENVIRONMENT*
- *LACK OF HOST NATION SUPPORT*
- *MULTIPLE THREATS*

MEDIA INVOLVEMENT:
- *POTENTIAL FOR HIGH VISIBILITY INCIDENTS*
- *TELL YOUR STORY OR SOMEONE ELSE WILL*
- *BE HONEST; AVOID SAYING NO COMMENT*
- *ANSWER ONE QUESTION AT A TIME - THINK!*
- *AVOID JARGON*

BACK

Signal Battlefield Assessment for Mission Analysis

- **Unit Communications Maintenance Status**
  - Status of FM (voice and digital), retrans, MSE, TACLAN, single channel TACSAT, etc
  - Availability of replacement parts/systems
  - Redundancy of communication means
  - Recommend cross-leveling of assets
  - ID non-standard use of FM nets (e.g. Spare 1 is recon freq.)
  - Endstate is no mission limitation
- **Higher HQ's Signal Plan**
- **Commo deadspace in AO** (from Terra Base or similar analysis)
- **Technical limitations** (e.g. range of organic systems, influence of weather, enemy EW system effects, etc.)
- **Analyze Terrain and Vegetation**: How use to our advantage? How overcome disadvantages?
- **Other Concerns:**
  - IEW threat
  - COMSEC changes
  - Range to DTOC/ BDE TAC
  - Security of Retrans/RAU/EPLRS Teams
  - Supporting overwhelming success or failure
  - Requirements of OPCON/Attached units
- **Time/distance of C2 Node and Retrans movement**
  - Acquire vision of bounds
  - Adjust scheme when envelope is pushed. Pessimism.
- **Retrans**
  - Keep Cdr, TAC and Main Effort on same freq
  - Synch with key events. Pessimism.
  - Contingency plan for Retrans failure
  - Recommend retrans locations
- **MSE support**
  - Synch with key events
  - Terrain, terrain, terrain
- **Personnel**
  - ID key MOS shortages

Commander's Guidance for Command and Control

- **Priority of nets**
- **ROE** in effect or any changes to previous guidance
- **CP Positioning Guidance** (SIGO recommends location)
- **Anticipated location of Commander during the fight** (to anticipate commo requirements)
- **Integration of retrans assets or non-standard commo assets provided from higher** (e.g. MSE, TACSAT, Micro wave, etc.)
- **Specific guidance on signal employment** (e.g net priority, ECM guidance, etc.)
- **SOI/COMSEC changeover times** (if deviation from unit SOP is required)
- **Guidance to LNOs** (if applicable)
- **Force Protection measures**
- **Orders timeline guidance**
- **Type of Order and rehearsal desired**

SIGNAL PLANNING CONSIDERATIONS

- Area of Operation: Desert, jungle, city, each will affect your communications.
- Organic Systems: Range, Deadzones, Includes all Task Org.
- Personnel: Adequate Signal soldiers assigned?
- Retrans: Location, No Fire Zone, Security, Movement
- Wire: Use when possible, more secure than radio

LEADER QUESTIONS

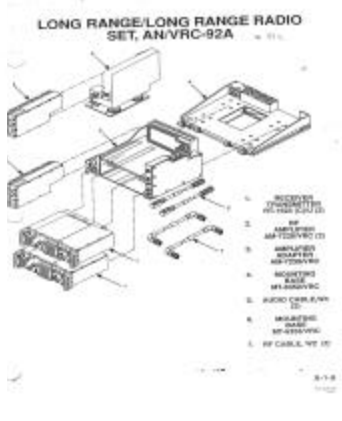
- Do I have redundant communications?
- Do I have alternate means?

BACK

SINCGARS

SINCGARS TYPE	RF POWER	VOICE RANGE	DATA RANGE
All models	LO MED HIGH	400 m 5 km 10 km	NA NA 5 km @ 500-4,800 bps 3 km @ 16,000 bps
Vehicle w Power AMP (VRC-89/90/91/92)	PA	40 km	25 km @ 600-2400 bps 22 km @ 4800 bps 10 km @ 16,000 bps

SINCGARS Models			
MODEL	RT – A	RT – B	DISMOUNT KIT
PRC-119:	NA	NA	NA (MAN PACK)
VRC-87	SR		
VRC-88	SR		YES
VRC-89	LR	SR	
VRC-90	LR		
VRC-91	LR	SR	YES
VRC-92	LR	LR	



BACK

HF RADIO SYSTEMS

CAPABILITY	AN/PRC-104	AN/GRC-213
FREQUENCY RANGE	20000 TO 299999 MHz IN 100 MHz INCREMENT 280000 POSSIBLE FREQUENCY SETTINGS	2 TO 299999 MHz IN 100 MHz INCREMENTS 280000 POSSIBLE FREQUENCY SETTINGS
OPERATING MODES	SINGLE SIDEBAND (selected USB or LSB) VOICE/CW DATA RECEIVE ONLY VOICE AND DATA) This will allow you to receive You cannot transmit in these modes	SINGLE SIDEBAND (selectable USB or LSB) VOICE/CW DATA RECEIVE ONLY (inhibits transmission operation)
RF OUTPUT POWER	20 W (PEP)	20 W (PEP)
RF OUTPUT IMPEDANCE	50 ohms, unbalanced. Output protected to infinite VSWR	50 ohms, unbalanced. Output protected to infinite VSWR.
ANTENNA TUNING	Automatic to 1.5:1 VSWR in 3 to 12 seconds	Automatic to 1.5:1 VSWR in 3 to 12 seconds
POWER REQUIREMENTS	20 0 to 32 0 V DC with input at 3.5 amp (24 0 V DC) for transmit (typical), 200 ma for receive (typical).	24 to 32 V AC, 26.5 V DC nominal
OPERATING TEMPERATURE RANGE	-51'F (-46'C) TO +160'F (+71'C)	-51'F (-46'C) to +160'F (+71C)
MEAN TIME BEFORE FAILURE	2500 Hours	2500 Hours
DIMENSIONS	12.5" X 10.5" X 2.75" (D X W X H)	12.5" X 6.12" X 8.63" (W X H X D)
WEIGHT	14 pounds including battery	50 pounds
ANTENNAS		Whip, Slant wire, Dipole, NVIS

BACK

INTELLIGENCE

- INTELLIGENCE PREPARATION OF THE BATTLEFIELD (IPB)
- INITIAL IPB – CONDUCTED DURING MISSION ANALYSIS
- TEMPLATE MATRIX
- DEVELOPING A THREAT COURSE OF ACTION
- SITUATION TEMPLATE (EXAMPLE)
- SITEMP MINIMUM STANDARDS
- EVENT TEMPLATING
- EVENT TEMPLATING (SAMPLE)
- RECONNAISSANCE & SURVEILLANCE PLANNING
- R&S - PREPARATION
- R&S – EXECUTION
- BN/TF IEW OPERATIONS CHECKLIST
- COLLECTION REQUIREMENTS PLANNING OPERATION
- COLLECTION REQUIREMENTS PLANNING OPERATION
- INTELLIGENCE INFORMATION PROCESSING – EVALUATION - RECORDING
- HEAVY DIVISION IEW RESOURCES
- LIGHT DIVISION IEW RESOURCES
- ESTABLISHING & PRIORITIZING INTELLIGENCE REQUIREMENTS
- PRIORITY INTELLIGENCE REQUIREMENTS (EXAMPLE)
- DECISION SUPPORT TEMPLATE
- COMMON THREAT SYMBOLOGY
- DEFENSE OUT OF CONTACT vs. DEFENSE IN CONTACT
- THREAT MRB DEFENSE
- THREAT COMPANY DEFENSE
- MRC BATTLE POSITION
- OPFOR DEFENSIVE COMBAT POWER
- DEFENSIVE FRONTAGES AND DEPTHS
  THREAT WEAPONS RANGES IN THE DEFENSE
- COMBAT SECURITY OUTPOST
- THREAT DOCTRINAL TEMPLATE (DEFENSE)
- THREAT RECON IN THE DEFENSE
- THREAT ARTY IN THE DEF
- THREAT PHASES OF FIRE (DEFENSE)
- OFFENSIVE FRONTAGES & DEPTHS
- MRD MARCH FORMATION
- THREAT RECONNAISSANCE DIVISION AND REGIMENTAL
- MRR IN MARCH FORMATION
- ENEMY MARCH FORMATION
- MRB IN ADVANCED GUARD FORMATION(BMP/BTR)
- COMBAT RECONNAISSANCE PATROL
- THREAT OFFENSIVE BATTLE DRILL
- THREAT DEPLOYMENT LINES
- THREAT ARTILLERY IN THE OFFENSE
- THREAT OFFENSIVE PHASES OF FIRE
- THREAT MOBILITY
- THREAT ANTITANK GUNS/MISSILES
- THREAT ARMOR
- THREAT APC'S/IFV'S
- THREAT ARTILLERY/MORTARS
- THREAT ANTITANK GUNS/MISSILES
- THREAT HELICOPTERS

INTELLIGENCE PREPARATION OF THE BATTLEFIELD (IPB)

IPB has four steps:

- Define the battlefield environment
- Evaluate the battlefields effects
- Evaluate the threat
- Determine threat COA

How to conduct IPB:

Define the battlefield environment

- Identify the significant characteristics of the environment
- Identify the limits of the area of operations
- Establish the limits of the area of interest
- Identify gaps in current intelligence holdings
- Identify the amount of detail required and feasible within the time available for IPB
- Collect the material and intelligence required to conduct the remainder of IPB

Evaluate the battlefield's effects on COA

- For friendly and enemy COAs evaluate the effects of:
- Terrain – OAKOC
- Weather – visibility, mobility, survivability
- Other characteristics of the battlefield

Evaluate the threat

- Identify gaps in knowledge of the threat and initiate action to acquire it
- Acquire relevant intelligence
- Update threat models
  - Convert threat doctrine or patterns of operation to graphics (doctrinal templates)
  - Describe in words the threat's tactics and options
  - Identify high payoff targets

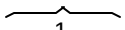
Determine threat courses of action

- Identify the full set of rational COAs available to the threat
- Consider wildcard COAs
- Evaluate and prioritize each COA
- Develop each COA in the amount of detail time allows
- Identify initial collection requirements

NAI - A point or area along AA where activity will confirm a COA

TAI - AN engagement point along a AA where the interdiction of the enemy will deny a particular capability

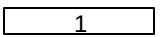
DP - Identify events, areas, and points where tactical decisions are required and where these decisions must be made



ROUTE NAI

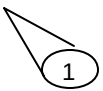
DECISION POINT

POINT TAI



AREA TAI

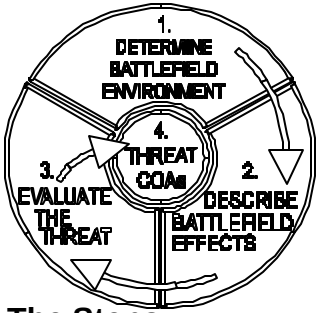
AREA NAI



POINT NAI

BACK

INITIAL IPB – CONDUCTED DURING MISSION ANALYSIS



"The Cycle"

The Steps

Step 1: Determine Battle Field Environment

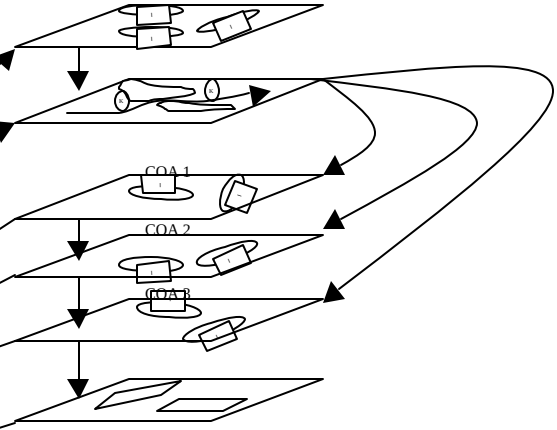
Step 2: Describe Battle Field Effects

Step 3: Evaluate the Threat

Step 4: Evaluate the Threat COAs

The Products

- AO/AI
- MCOO
- DOCTRINAL TEMPLATE
- SITUATIONAL TEMPLATES
- EVENT TEMPLATE



Pg 2-51, FM 34-130

TEMPLATE MATRIX

	MCOO	DOCTRINAL TEMPLATE	SITUATIONAL TEMPLATE	EVENT TEMPLATE	DECISION SUPPORT TEMPLATE
OBSTACLES TO GROUND MOVEMENT	X				
TERRAIN CLASSIFICATION	X				
OBJECTIVES/CONTROL MEASURES	X				X
AVENUES OF APPROACH MOBILITY CORRIDORS	X			X	X
KEY TERRAIN	X				
ALL ENEMY UNITS (BOS)		X			
ENEMY UNITS ON AVENUES OF APPROACH			X		
TIME PHASE LINES			X	X	X
NAMED AREAS OF INTEREST				X	
TARGETED AREAS OF INTEREST					X
DECISION POINTS					X

BACK

DEVELOPING A THREAT COURSE OF ACTION

A threat COA has three components:

1. A written description of the COA and the enemy's options for that COA
2. A High Value Target (HVT) List
3. A Situational Template* (DOCTRINAL TEMPLATE + MCOO = SITEMP)
   - •ID the Main Effort for that COA
   - •Ensure analysis and graphical representation of all supporting BOS assets supporting that COA

* See Annex B FM 34-130 for SITEMP Standards

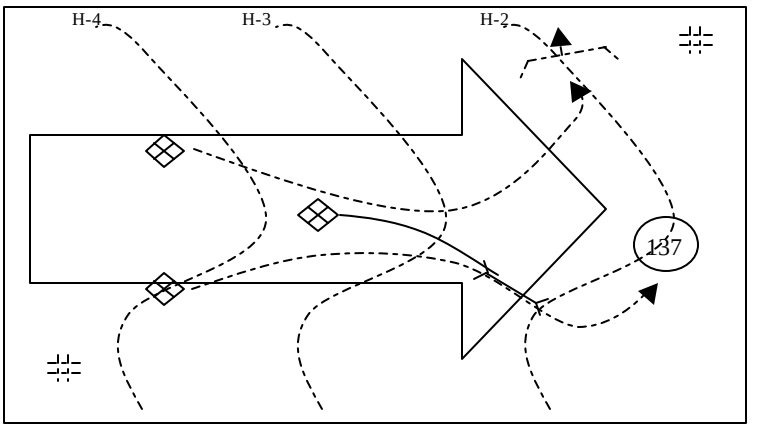
#1

The enemy will attack in the Advance Guard formation with a reinforced MIB forming the Advance Guard Battalion. Decisive to this operation is his ability to seize hill 137. IT is decisive because he will be able to pass the MRD's Main Effort MRR across the Rhine River. One MIB the (ME) attacks seize hill 137. One MIB attack to FIX enemy in the North to prevent reposition on the ME. ONE MIB (SE2) Attacks to Breach enemy tactical obstacles to facilitate passage of the ME to hill 137. Fires will be used to to initially disrupt defensive preparations then suppression of enemy battle positions. Engineers will be focused on mobility. At end state the hill 137 is seized with forces oriented to the north west to repel any counterattacks.

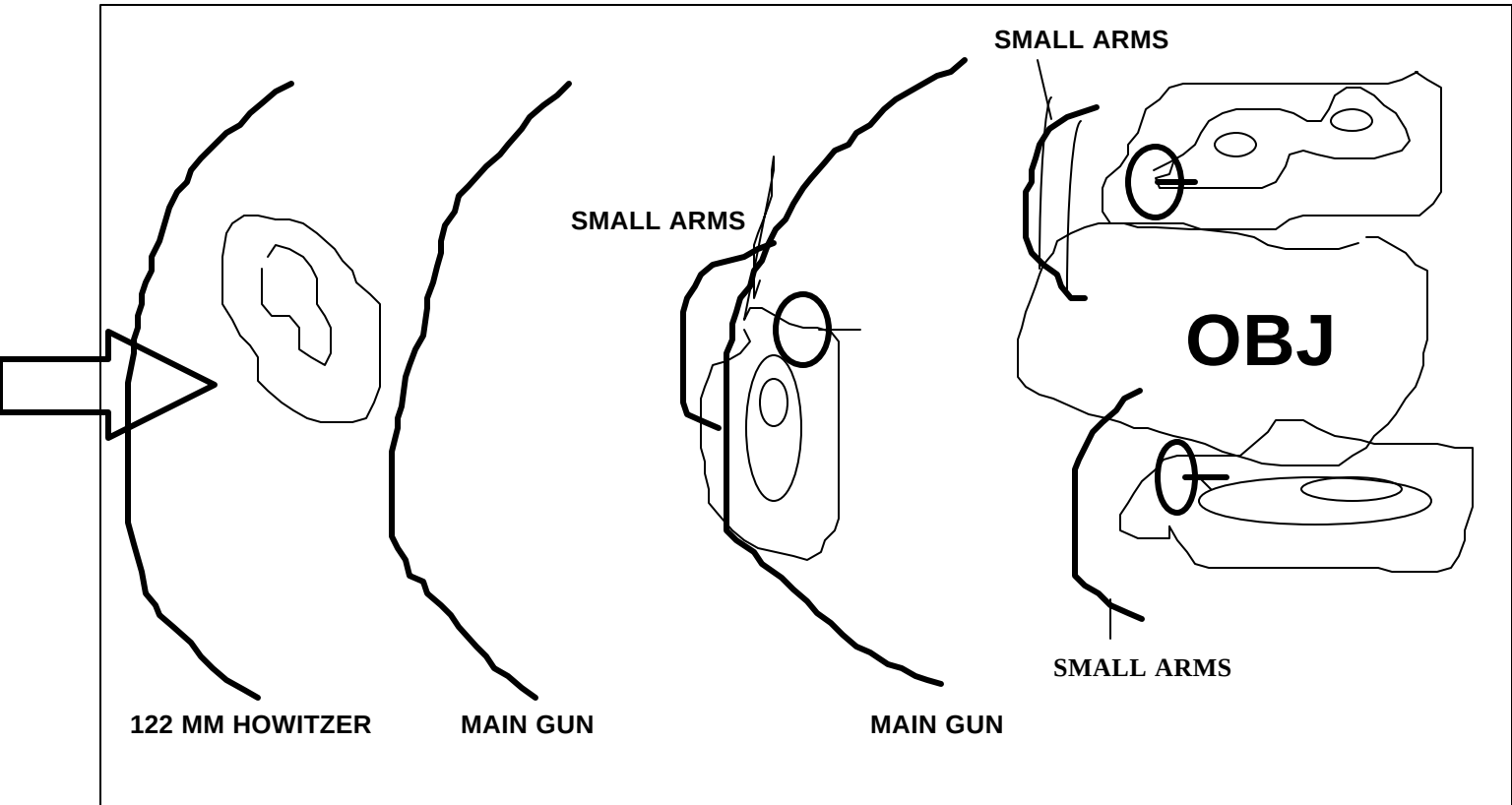
#2

High Value Targets:
- •KMT -5 (Roller)
- •KMT -8 ()plow)
- •MTU-20 (Bridge)
- •DIM (Mine detector)
- •MTK-2(Mine Clearer)

#3



SITUATION TEMPLATE (EXAMPLE)



BACK

SITEMP MINIMUM STANDARDS

1. **DEFENSIVE SITEMP**
   - *ENEMY BATTLE POSITION*
   - PRIMARY / ALTERNATE/ SUPPLEMENTARY POSITIONS
   - *VEHICLE / EQUIPMENT LOCATIONS ARRAYED*
   - WPN SYSTEMS, TRENCHES, CPs, ADA, RADARS
   - *OBSTACLES / OPs*
   - *FIRE SACS, MAX ENGAGEMENT LINES, LINES FOR DIRECT FIRE & INDIRECT FIRE SYSTEMS w/ RESPECT TO TERRAIN*
   - RANGE FANS FOR ADA SYSTEMS
   - *LOCATION, COMPOSITION & EMPLOYMENT OF THE CATK / REINFORCING / RESERVE FORCES*

2. **OFFENSIVE SITEMP**
   - *AVENUE OF APPROACH / MOBILITY CORRIDOR*
   - IMMEDIATE/SUBSEQUENT OBJ, PROPER UNIT ID
   - *ORDER OF BATTLE w/RESPECT TO TERRAIN, TIME & SPACE*
   - FOCUS ON SNAPSHOTS IN TIME OR HOW THE ENEMY FORCE MAY APPEAR AS HE MOVES

(MINIMUM REQUIREMENTS FOR A MARGINAL "GO" ARE ITALICIZED)

3. **STUDENTS SHOULD PREPARE AND BRIEF ENEMY USING THE FOLLOWING FORMAT**:
   - DISPOSITION
   - COMPOSITION
   - STRENGTH
   - RECENT ACTIVITIES/CAPABILITIES
   - MPCOA / MDCOA

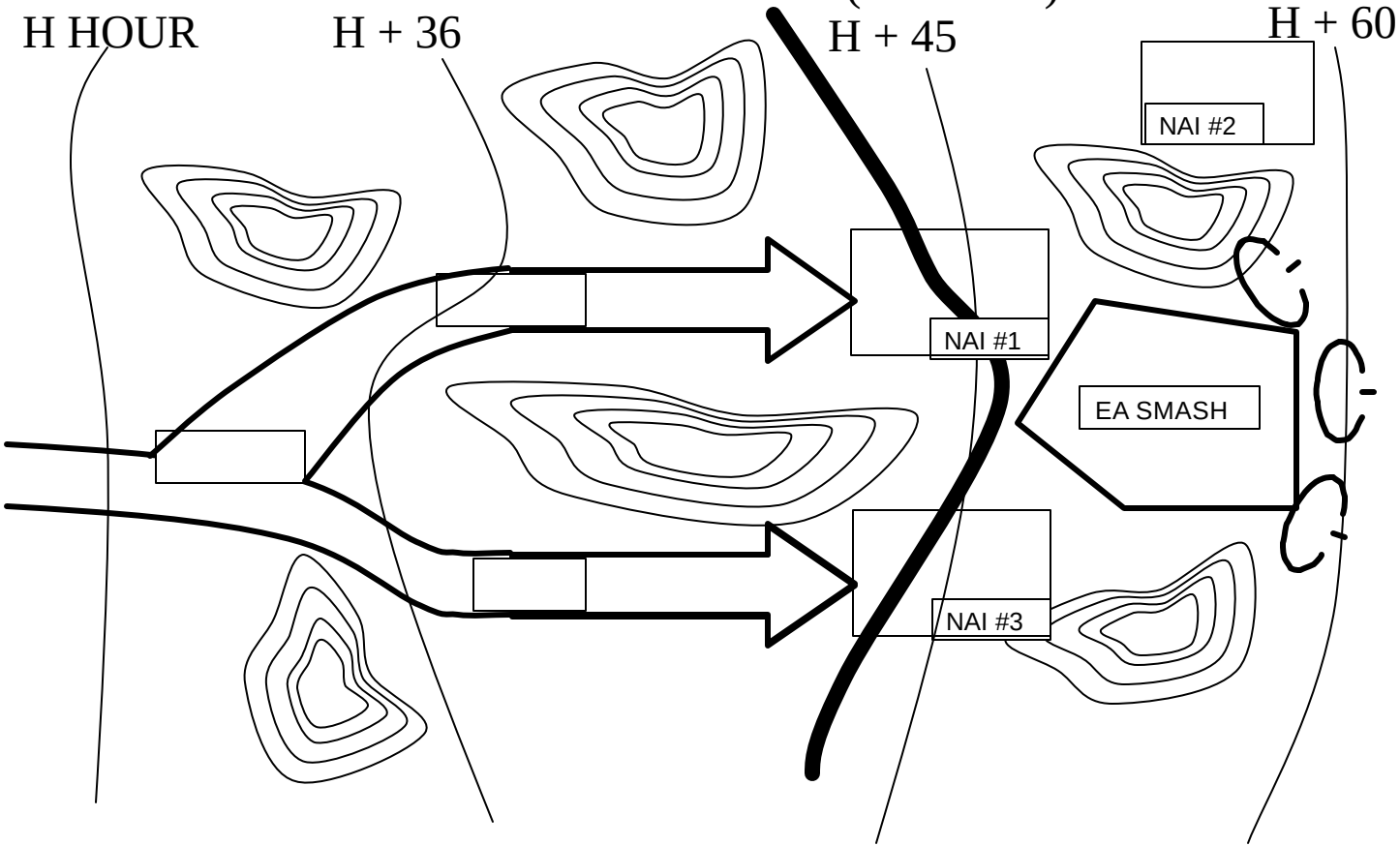
BACK

EVENT TEMPLATING

1. Start with Situation Template
2. Determine Time Phase Lines (TPLs) and Mobility Corridors
3. Determine where events will occur that differentiates between EN COAs (these become NAIs)
4. Determine what action confirms or denies a particular EN COA (Indicators)
5. Determine when events will occur (NET/NLT)

EVENT MATRIX (S2) | RECON & SURVEILLANCE MATRIX (S3)

NAI	LOCATION	EN COA	INDICATOR	NET/ NLT	PRIORITY	PRIMARY/ ALTERNATE	CONFIRMATION	REMARKS
1	FL 123456	1	Bridging Operations	H+30 H+1.5				
2	FL 123456	1	Armor Assets	H+1.5 H+2				
3	FL 123456	2	Bridging Operations	H+45 H=1.5				


EVENT TEMPLATING (SAMPLE)
H HOUR
H + 36
H + 45
H + 60
NAI #2
NAI #1
EA SMASH
NAI #3

RECONNAISSANCE & SURVEILLANCE PLANNING

RECONNAISSANCE – Directed toward one or more specific targets without a requirement for continuous coverage.
SURVEILLANCE – Systematic observation on a continuous basis

R&S CHECKLIST

- INITIAL REQUIREMENTS
  - Did higher provide tasking requirements?
  - Was the commander's PIR/IR stated and included?
  - Did the commander provide R&S guidance?
  - Did the S2 brief the staff on enemy collection capabilities?
  - Other staff tasks?
- SPECIFIC INFORMATION REQUIREMENTS DEVELOPED
  - S2 identified air/ground avenues of approach
  - Situation/Event Templates reflect probable/prioritized enemy courses of action
  - NAIs developed in detail (what is expected, when, and where)
  - Collectable indicators at NAIs developed
  - Specific information requirements developed from NAIs and indicators
  - Reporting requirements developed for priority collection missions to allow commander time to change plan
- POSSIBLE COLLECTORS ANALYZED:
  - S2 coordinates with staff/S2/G2 to identify all
  - S2 analyzed asset capabilities to develop collection requirements based on:
    - Range to target time available
    - Terrain
    - Target characteristics
    - Weather
    - Enemy
    - Communications
  - S2 analyzed collection redundancy (necessary/unnecessary)
  - Staff identified support requirements (communication nets, retrans, fire support, logistical support, special equipment support)
  - S2 identified gaps in collection
  - Back briefed S3/CDR on R&S concept
  - Warning Orders sent to appropriate assets
  - Timeliness: When was mission received?
    - What is NLT for execution?
    - When was templating accomplished?
    - When was tentative plan made?
    - Back briefed?
    - When were warning orders issued?
    - When is initial reporting required?
    - Who was in charge of R&S planning?
    - Who was in charge of Counter Reconnaissance planning?

BACK

R&S - PREPARATION

A. **Specific Collection Instructions**:

1. What assets were used? What assets are available?

Scouts	Anti-tank	Infantry
GSRs	Aviation	Armor
Patrols	Engineers	EW
OPs	Signal	Others
FOs	Cavalry	

2. Did the S2 provide detailed instruction to tasked assets? Did the instructions include:

Who is tasked?
What to look for?
When to look?
Where to look?
What you could expect to see?
How to get there?
Who to coordinate with?
Reporting requirements?

3. Was the collection location appropriate? (concealment collectable)

4. Were there sufficient control measures included to control asset during mission?

5. Did the S2 request assistance from higher for the collection gaps identified?

6. Did the R & S plan cover all collection requirements?

7. Were assets over tasked?

B. **Coordination**.

1. What is the format for the plan? (collection plan, overlay, matrix, etc.)

2. Were direct/indirect fires or jamming coordinated between staff and S2?

3. Additional equipment (special) planned for?

4. Communications nets established to meet reporting needs?

5. Commander/staff briefed on plan prior to execution?

6. Cdr/S3 approve final plan by CDR intent?

7. Assets know specified requirements (PIRs/IRs).

8. Plan disseminated to all involved or need to know?

9. Plan sent to higher?

C. **Assess Internal Coordination**.

1. Equipment checked?
2. Internal procedures clarified?
3. Coordination between assets?
4. Mission rehearsed?
5. Was plan developed far enough in advance for assets to prepare/rehearse?
6. Plan developed in time for higher to review?

BACK

R&S – EXECUTION

A. Continuity of R&S&CR Operations -

1. Did unit plan provide for operations when scout or other R&S assets are inoperable?
2. Did unit SOP provide for operations during briefings, debriefings, or rehearsals?
3. Are units/leaders cross trained to facilitate substitutions or replacement of scouts?

B. Assets/Units Response -

1. Did assets depart/set up on time?
2. Did assets use cover, concealment, and camouflage?
3. Were assets able to observe enemy undetected?
4. Was low level deception used?
5. Were report requirements met?
6. Were enemy locations pinpointed?
7. Was the objective reconned?
8. Were obstacles identified/marked?
9. Were routes marked?
10. Was enemy recon located?
11. Were CR missions performed?
12. Did assets assist with S2 during attack?
13. Did assets assist with directing or controlling forces?
14. Was terrain reconned? (trafficability/reported)

C. Reporting -

1. Reports timely, accurate and concise?
2. Assets debriefed?

BACK

BN/TF IEW OPERATIONS CHECKLIST

This list represents measures for successful battalion task force intelligence operations.

- **Did the S2 utilize the IPB process before combat operations began?**
- **Did the S2 use overlays, graphic displays, or templating techniques in depicting intelligence available to the commander?**
- **Did the S2 and the TF Cdr review OPFOR doctrine and tactics before combat operations began?**
- **Did the S2 provide company team commanders with PIRs/IRs needed by TF or higher headquarters?**
- **Did the S2 and S3 coordinate a patrol plan.**
- **Did the S2 coordinate with units to conduct patrols?**
- **Did the S2 include combat patrols in the collection plan?**
- **Did the S2 coordinate the patrols with the FSO & ENG?**
- **Did the S2 and S3 coordinate in planning scout operation?**
- **Did the S2 supervise scout operations?**
- **Did scout operations include fire support plans and recognition signals?**
- **Did the S2 coordinate with the fire support officer for information on the enemy?**
- **Did the S2 coordinate with adjacent and supporting units for information on the enemy?**
- **Did the S2 have a reconnaissance and surveillance plan?**
- **Did the S2 coordinate with the S3 concerning reconnaissance requirements?**
- **Did the S2 request intelligence support from higher HQ if needed?**
- **Did the S2 request aerial recon support through S2 channels?**
- **Did the S2 coordinate with the S1 on POW estimates**
- **Did the S2 ensure that EPW's were processed properly**
- **Did the S2 coordinate with the S4 on the disposition of captured enemy material?**
- **Did the S2 seek technical intel assistance from higher HQ?**
- **Did the S2 and the intel system have the personal direction of the commander?**

BACK

COLLECTION REQUIREMENTS PLANNING OPERATION

- **Did the S2 request doctrinal, situational, and event template support from higher headquarters?**
- **Did TF Cdr & S2 conduct a ground or map reconnaissance before combat operations began?**
- **Did the S2 receive information or intelligence from Bde and adjacent units?**
- **Did the S2 receive PIRs and IRs from the Bde?**
- **Did the S2 receive combat information from patrols?**
- **Did the S2 debrief the patrols?**
- **Did the S2 receive patrol debriefing reports?**
- **Did the S2 receive enemy SPOTREPS from recon elements?**
- **Did the S2 receive SPOTREPS from company teams?**
- **Did the S2 receive a R&S plan?**
- **Did the R&S plan include all assets?**
- **Did the S2 ensure rapid dissemination of combat info?**
- **Did scouts conduct zone or area recon?**
- **Did scouts conduct security operations (screen or guard)?**
- **Did the S2 request and receive info gathered through ESM from BDE?**
- **Did the S2 request and receive weather info from BDE?**
- **Did the S2 R&S plan include OPs, GSRs, and REMBASS?**
- **Did the S2 advise the TF Cdr on employment of GSS to support the scheme of maneuver?**
- **Did the S2 assign missions to the GSR section?**

BACK

COLLECTION REQUIREMENTS PLANNING OPERATION

- **Did the S2 ensure that the GSRs were provided security at all times?**
- **Did the S2 request REMS support from Bde?**
- **Did the S2 integrate REMS support with other surveillance means?**
- **Did the S2 designate areas to be covered by REMS?**
- **Did the REMS teams report exact locations of sensors?**
- **Did the S2 ensure REMS coverage of flanks, gaps, and avenues of approach?**
- **Did aerial recon reports provide information on a timely basis to support current combat operations?**
- **Did the S2 have a dedicated intel net?**
- **Did the S2 receive SPOTREP for enemy information in the proper format?**
- **Did the S2 seek useful processed intel and combat information from higher, subordinate, & adjacent units**
- **Did the S2 assign areas, methods of search and locations to the GSRs?**
- **Did the S2 receive reports from the GSR teams?**
- **Did GSR teams use messenger or wire to report information when possible?**
- **Did the S2 receive radar surveillance cards from the GSR teams?**
- **Did GSRs locate on dominating terrain over looking the areas to be covered?**
- **Did GSRs locate near supported units?**
- **Did GSRs have covered and concealed routes to and from their positions?**
- **Did the S2 employ GSRs forward during offensive operations?**
- **Did the S2 employ GSRs in the main battle area during defensive operations?**
- **Did the S2 employ the GSRs in the covering force area (if applicable)?**

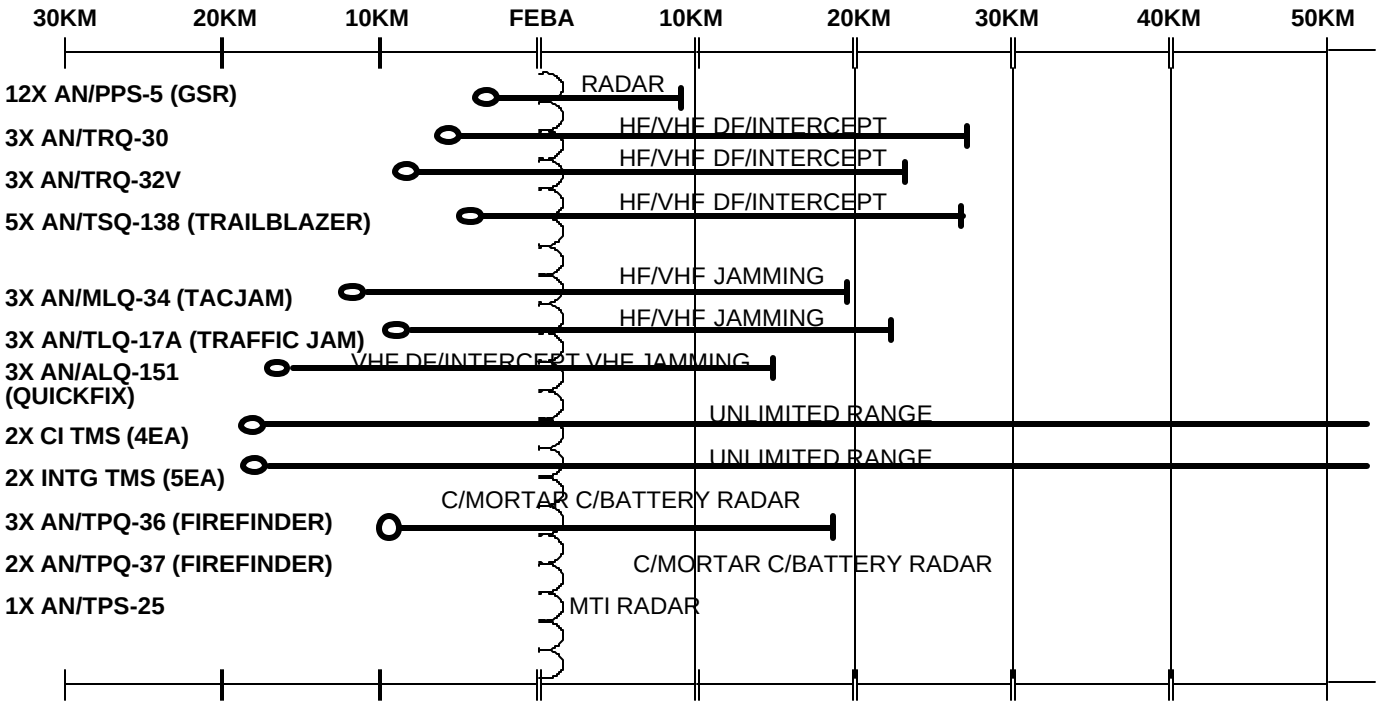
BACK

INTELLIGENCE INFORMATION PROCESSING – EVALUATION - RECORDING

- **Did the S2 identify enemy activity and probable courses of enemy actions?**
- **Did the S2 ensure captured documents and equipment were tagged and evacuated to higher HQ?**
- **Did the S2 produce an intelligence estimate?**
- **Did the S2 provide the TF Cdr with an analysis of enemy strength and capabilities that could influence the TF mission?**
- **Did the S2 provide the Co/Tm CDRs with PIRs and IRs needed by the TF or higher HQ?**
- **Did the S2 provide Bde with its ESM and ECM priorities?**
- **Did the S2 provide combat information to Bde and adjacent units?**
- **Did the S2 disseminate combat information from patrols to the TF staff and Bde?**
- **Did the S2 disseminate combat information to the Cdr, staff,subordinate and supporting units, and others as necessary?**
- **Did intelligence and combat information get to the TF and subordinate CDRs in time to influence their planning strategies?**

BACK

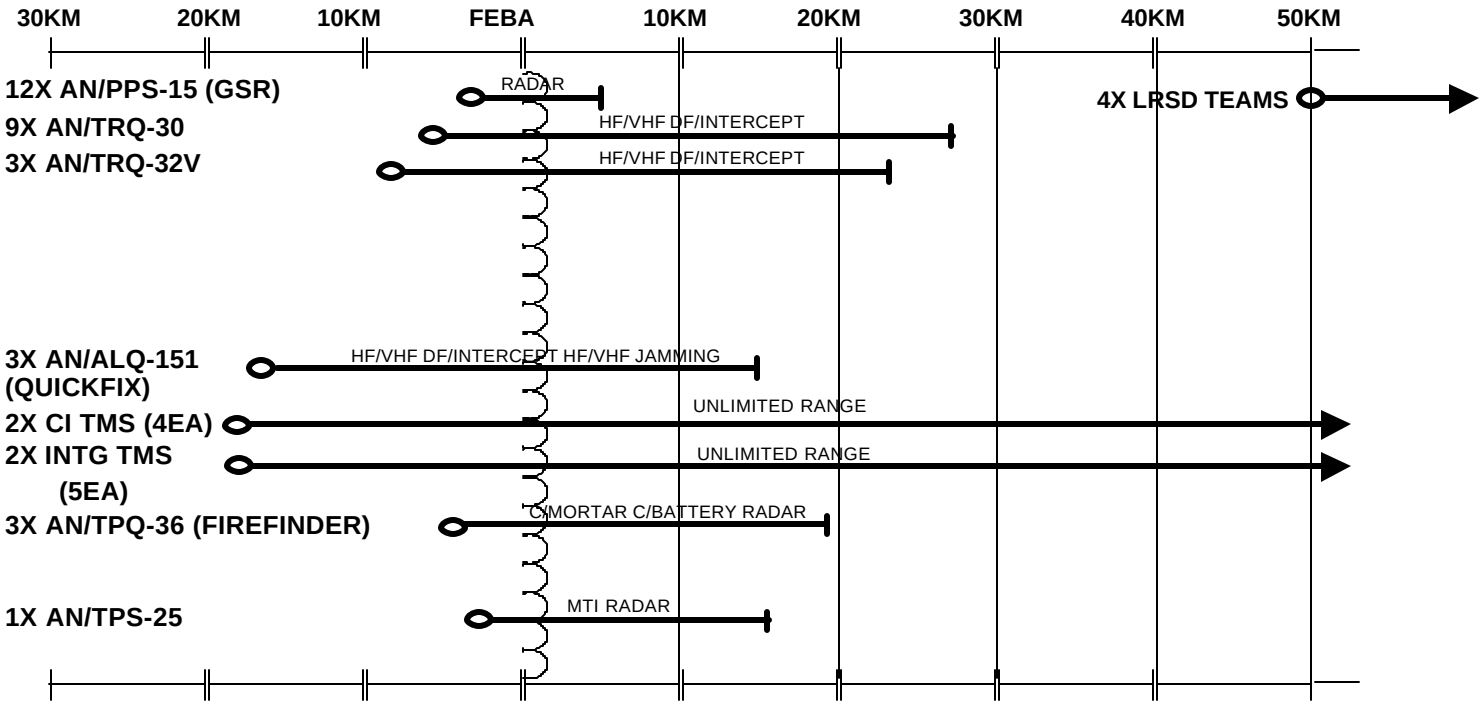
HEAVY DIVISION IEW RESOURCES



*** DOES NOT INCLUDE RESOURCES ORGANIC TO MANEUVER BRIGADES**

BACK

LIGHT DIVISION IEW RESOURCES



* DOES NOT INCLUDE RESOURCES ORGANIC TO MANEUVER BRIGADES

BACK

ESTABLISHING & PRIORITIZING INTELLIGENCE REQUIREMENTS

DURING WARGAMING, YOUR S2/G2 DEVELOPS A SET OF INTELLIGENCE REQUIREMENTS (IRs) FOR EACH FRIENDLY COA. EACH IS LINED TO A SPECIFIC ENEMY ACTION THAT REQUIRES A FRIENDLY RESPONSE.

PRIORITY INTELLIGENCE REQUIREMENTS (PIR) ARE THOSE IR WHICH ARE CRITICAL TO THE ACCOMPLISHMENT OF YOUR MISSION ESSENTIAL TASKS AND SUPPORT DECISIONS THE COMMANDER WILL MAKE DURING THE COURSE OF THE BATTLE. WARGAMING WILL DICTATE WHICH IRs WILL BECOME PIRs AS THE MISSION RUNS ITS COURSE.

AS FORCE COMMANDER YOU MUST ALWAYS SELECT OR APPROVE THE PIRs. SOME GUIDELINES TO FOLLOW ARE:

1. EVERY IR MUST BE SITUATIONALLY TEMPLATED AND WARGAMED.
2. THE COLLECTION MANAGER SHOULD NOT ACCEPT OR PROPOSE AN IR UNTIL HE FULLY UNDERSTANDS AND CAN TRACK THE FRIENDLY ACTION THE IR IS DESIGNED TO SUPPORT.
3. A PIR MUST BE ABLE TO BE COLLECTED AND YOU MUST UNDERSTAND HOW YOUR S2 INTENDS TO COLLECT TO SATISFY YOUR PIR.
4. YOU MUST RESTRICT YOUR PIR TO ONLY YOUR MOST CRITICAL REQUIREMENTS BECAUSE THERE ARE ONLY LIMITED COLLECTION ASSETS AVAILABLE.

SUPPORT TO OPSEC

- Did the S2 and the S3 coordinate EEFI concerning desired OPSEC protective measures?
- Did the S2 estimate enemy capabilities for obtaining information about the TF?
- Did the S2 estimate enemy intelligence capabilities for determining TF operations?
- Did the TF use vehicle camouflage?
- Did the TF exercise light, noise, and trash discipline?
- Did the TF employ Electronic Protective measures including COMSEC and anti-jamming procedures

BACK

PRIORITY INTELLIGENCE REQUIREMENTS (EXAMPLE)

MISSION: 2D BDE ATKS IN ZONE AT 270430 MAY 94 TO DESTROY ENEMY FORCES ON OBJ KILL (WK2395). ESTABLISH HASTY DEFENSES ON OBJ KILL NLT 290600 MAY 94 TO STOP ATK OF THE 43D MRD. ON ORDER CONTINUE THE ATTACK IN ZONE TO SEIZE OBJ DEATH (WK4098).

ANTICIPATED TIME	PROPOSED PIR
230600 - 282130	WILL THE ENEMY USE CHEMICAL AGENTS ON OUR RESERVE IN AA SMITH?
230600 - 270800	WILL THE ENEMY DEFEND OBJ KILL USING A FORWARD SLOPE DEFENSE?
230600 - 270900	WILL THE ENEMY RESERVE TANK BATTALION REACH PL BOB BEFORE 270900 MAY 94? (NOTE: PL BOB IS 3 KM PAST OBJ KILL)
271000 - 302200	WILL THE 43D MRD SEND ITS MAIN ATTACK ALONG AVENUE OF APPROACH 2?
271000 - 031200	WHAT SIZE ENEMY FORCE IS DEFENDING OBJ DEATH?
291200 - 031200	ARE THE BRIDGES OVER THE BODANGO RIVER INTACT?

(NOTE: THE BODANGO RIVER LIES BETWEEN OBJ KILL AND OBJ DEATH AND IS UNFORDABLE)

NOTE: There is no "set" of PIR useful in every situation. This is an example of the TYPES of PIR you should expect to see from your S2 for your approval. Because your intel needs will change over time, most PIR will only be important during certain times.

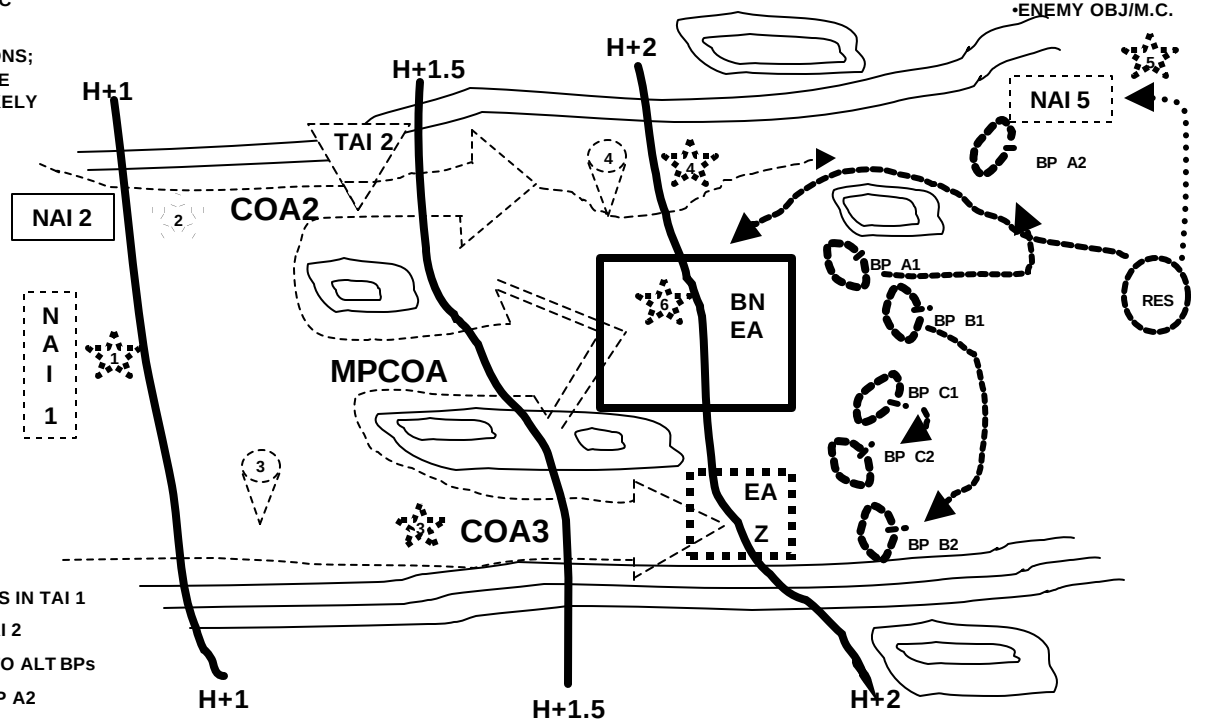
BACK

DECISION SUPPORT TEMPLATE

INCLUDES

- OPNs GRAPHICS
- DECISION POINTS
- TAIs & TPLs
- ENEMY OBJ/M.C.

- ID WHERE A DECISION MUST BE MADE TO INITIATE A SPECIFIC ACTIVITY/EVENT
- DOES NOT DICTATE DECISIONS; INDICATES WHEN/WHERE THE NEED FOR A DECISION IS LIKELY TO OCCUR
- BASED ON CCIR



DP1 ENGAGE 2nd ECH W/CAS IN TAI 1

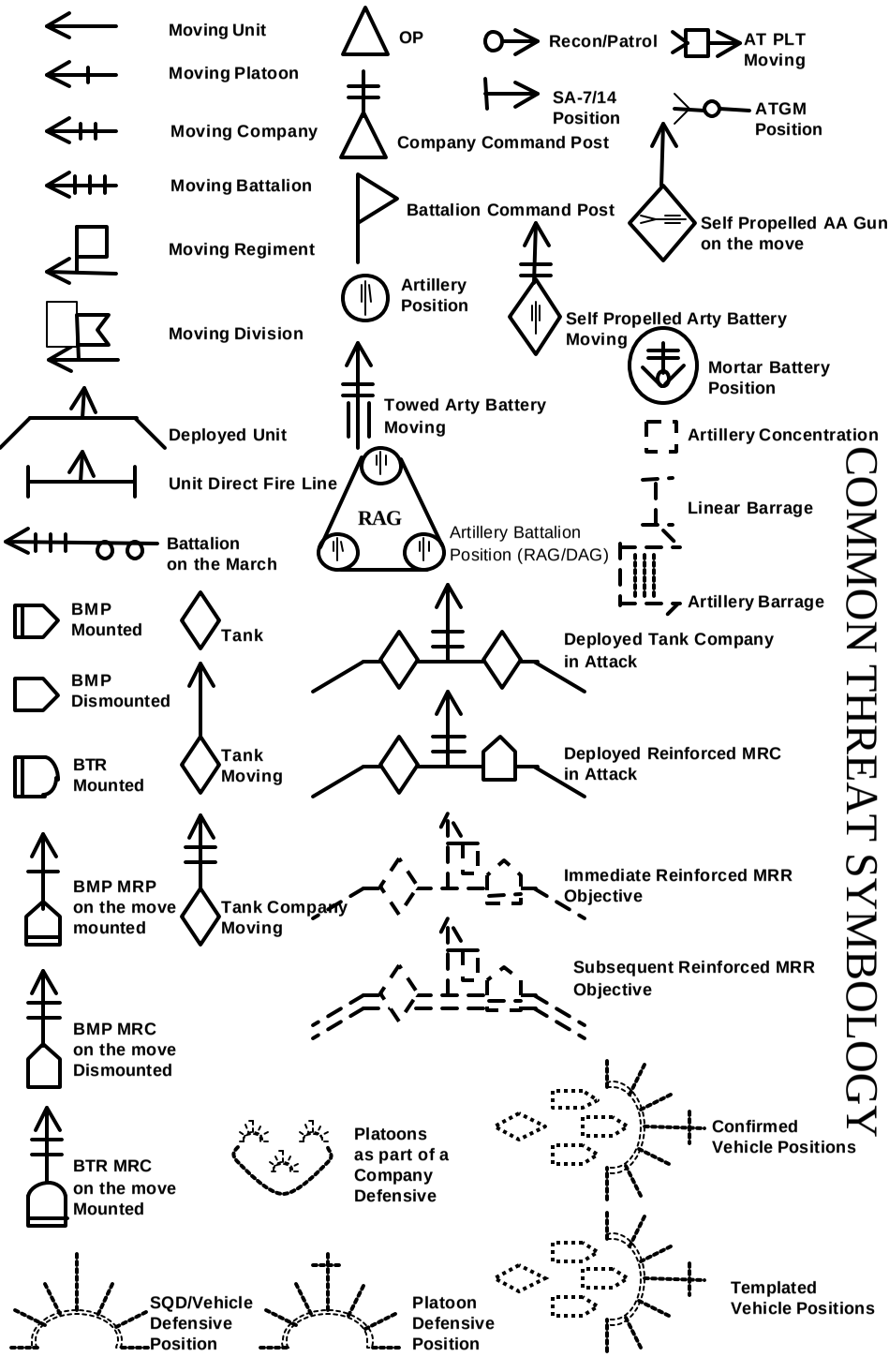
DP2 EMPLOY FASCAM AT TAI 2

DP3 REPOSITION B&C COs TO ALT BPs

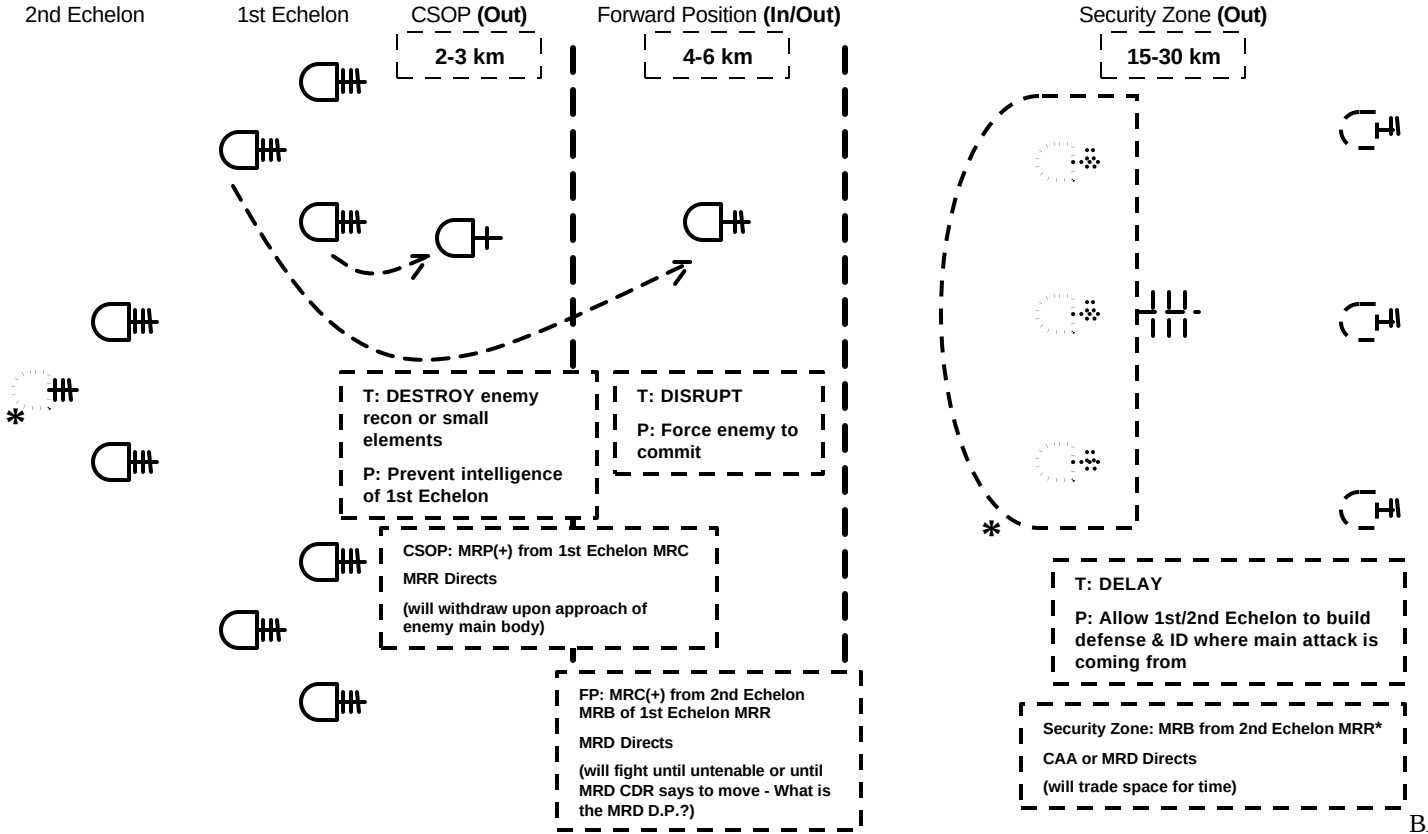
DP4 REPOSITION A CO TO BP A2

DP5 DESTROY AASLT WITH RESERVE

DP6 EMPLOY RESERVE IN BN EA

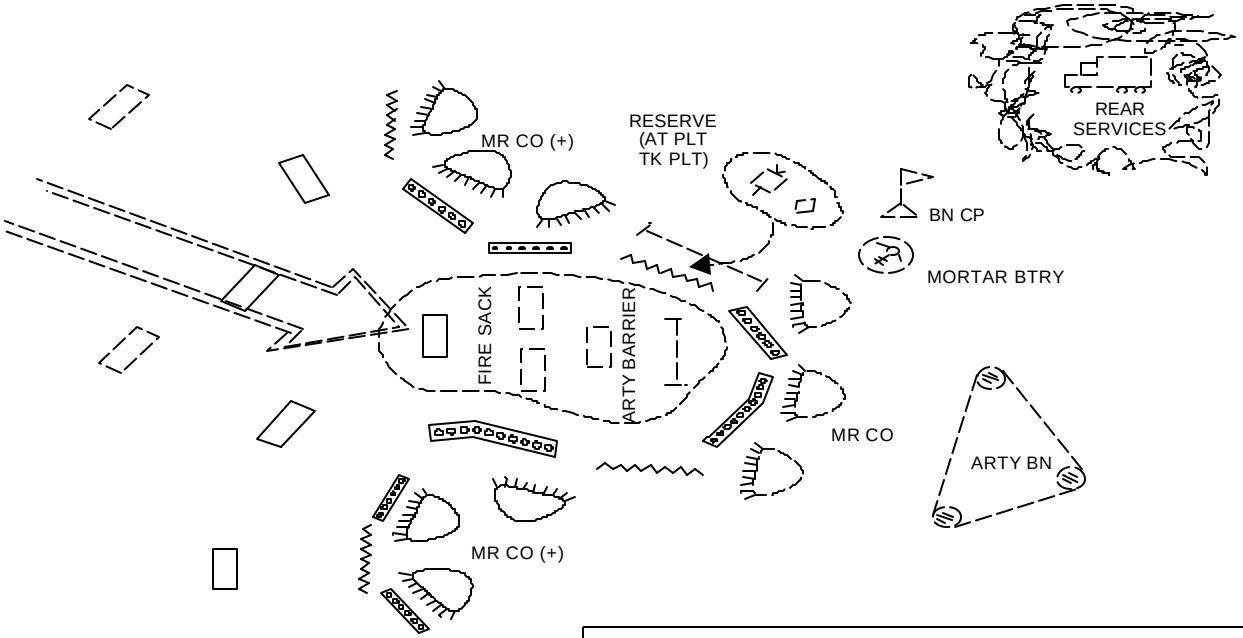

Moving Unit
Moving Platoon
Moving Company
Moving Battalion
Moving Regiment
Moving Division
OP
Company Command Post
Battalion Command Post
Artillery Position
Towed Arty Battery Moving
RAG
Artillery Battalion Position (RAG/DAG)
Recon/Patrol
SA-7/14 Position
AT PLT Moving
ATGM Position
Self Propelled AA Gun on the move
Self Propelled Arty Battery Moving
Mortar Battery Position
Artillery Concentration
Linear Barrage
Artillery Barrage
Deployed Unit
Unit Direct Fire Line
Battalion on the March
BMP Mounted
BMP Dismounted
BTR Mounted
Tank
Tank Moving
Tank Company Moving
Deployed Tank Company in Attack
Deployed Reinforced MRC in Attack
Immediate Reinforced MRR Objective
Subsequent Reinforced MRR Objective
BMP MRP on the move mounted
BMP MRC on the move Dismounted
BTR MRC on the move Mounted
Platoons as part of a Company Defensive
Confirmed Vehicle Positions
Templated Vehicle Positions
SQD/Vehicle Defensive Position
Platoon Defensive Position
COMMON THREAT SYMBOLOGY

DEFENSE OUT OF CONTACT vs. DEFENSE IN CONTACT



BACK

THREAT MRB DEFENSE



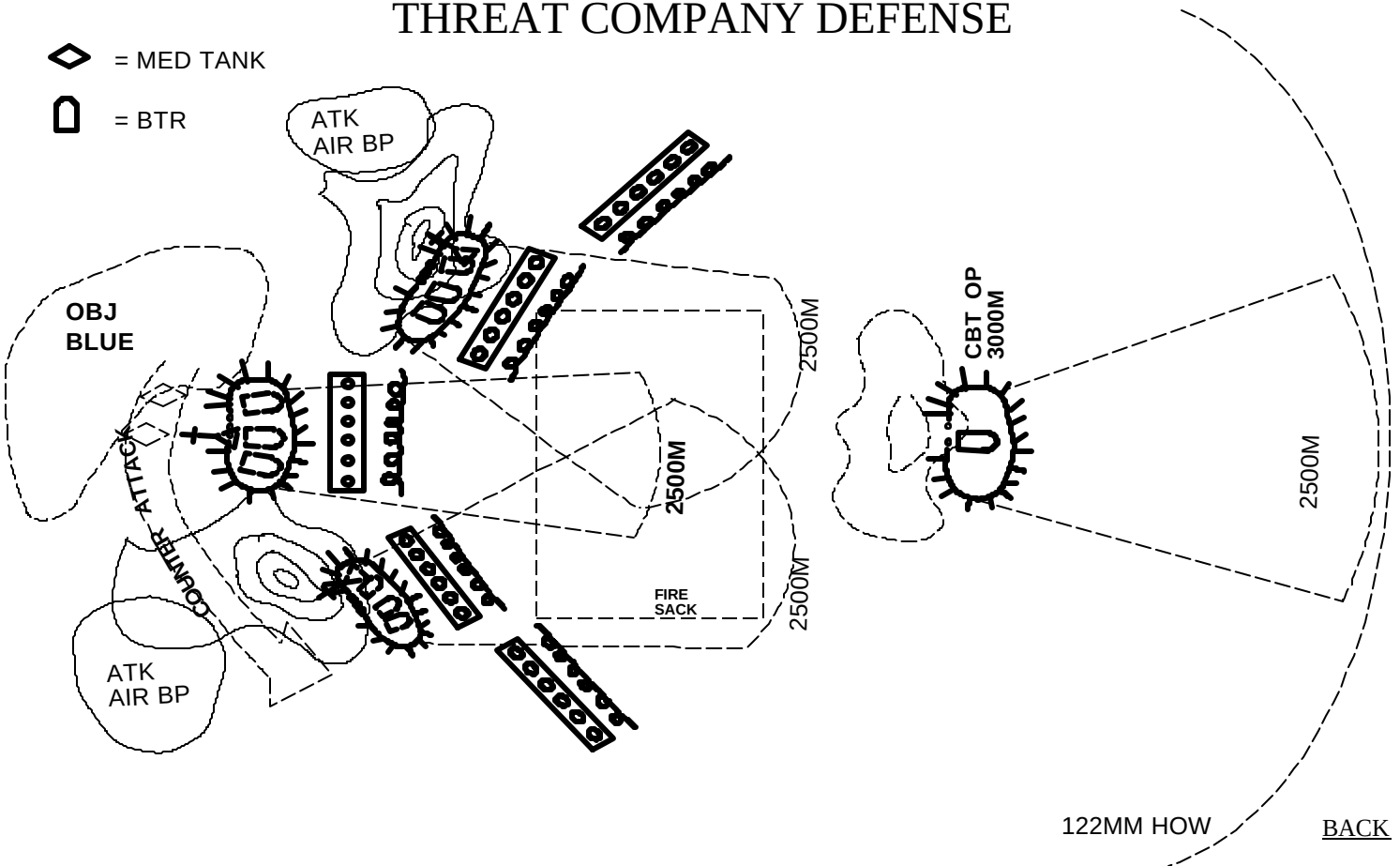
NOTE: A battalion usually defends in a single echelon, in an area 3 to 5 kilometers wide and up to 2 kilometers deep. When defending a narrow frontage or if greater depth is required, it may deploy in two echelons as above. Distance between echelons can be up to 500 meters in depth. Reserves are located behind the second echelon.

LEGEND

Minefield	Preplanned artillery concentration
Barrier	Probable enemy avenue of approach

BACK

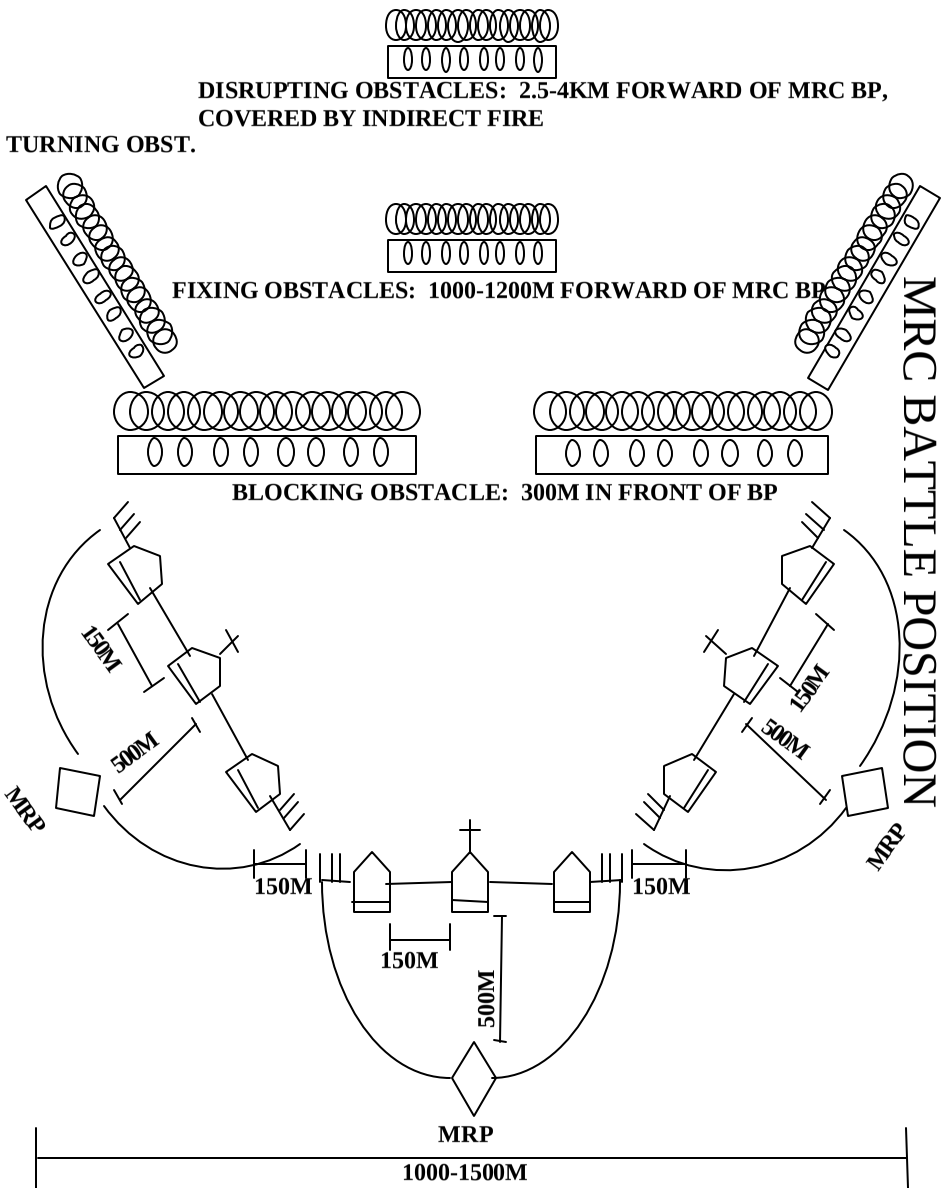
THREAT COMPANY DEFENSE

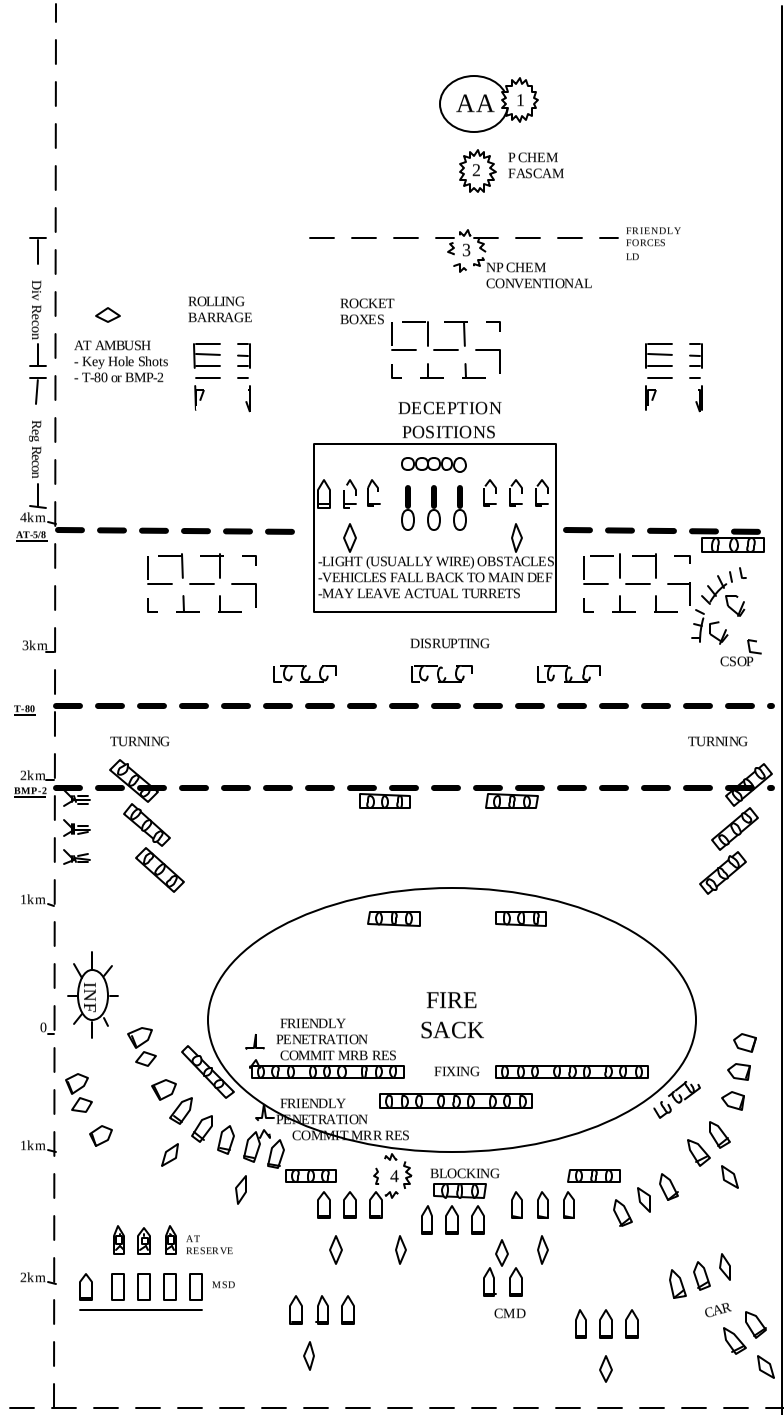


BACK

THE BASICS OF A COMPANY BATTLE POSITION:

1. 100-200m between each platoon BP
2. Usually a total of 3-4 tanks, 10-12 BMPs
3. Fighting positions not occupied until we cross LD
4. Gaps between MRPs covered by AT / MOD assets
5. MRP farthest back will have the most tanks (greater range)
6. All avenues of approach will be covered with multiple rocket boxes





PHASES OF FIRE

I. FIRE INTERDICTION
P CHEM
- Interdict/disrupt movement formations
- Shape battlefield
- DAG initially, then RAG fires called by CSOP
CONVENTIONAL
- Target AA's /Arty Batteries
- Called by DRT's

II. REPEL ENEMY ATK
NP CHEM
FASCAM
CONVENTIONAL
- Most important phase
- Starts at LD
- Ends at OPFOR defensive positions
- Rocket Boxes on open avenues of approach
- Rolling Barrages on canalized avenue of approach
- DAG, RAG and mortars

OPFOR DEFENSIVE COMBAT POWER

III. FS OF DEFENDING TROOPS
CONVENTIONAL
- FPF
- Prevent ATK from developing
- Stop deeper penetration
- Separate infantry/armor

IV. FIRE DESTRUCTION OF ENEMY DURING CATK
CONVENTIONAL
- Supports MRR Reserve commitment

MRR Reserve - 7-10km behind 1st echelon defense
- Both AT and CA reserve
- CAR = MRC
- Committed once main effort ID'd

DAG - 4-6km behind 1st echelon defense
- 1 x 2S19, 24,700 (30,000 RAP)
- 1 x 2S5, 28,000 (33,000 RAP)
- 1 x BM21, 20,380 (30,000 RAP)

RAG - 1-4km behind 1st echelon defense
- 1 x 2S1, 15,300 (20,500 RAP)
- 2 x 2S19, 24,700 (30,000 RAP)

DEFENSIVE FRONTAGES AND DEPTHS (PREPARED DEFENSE)**

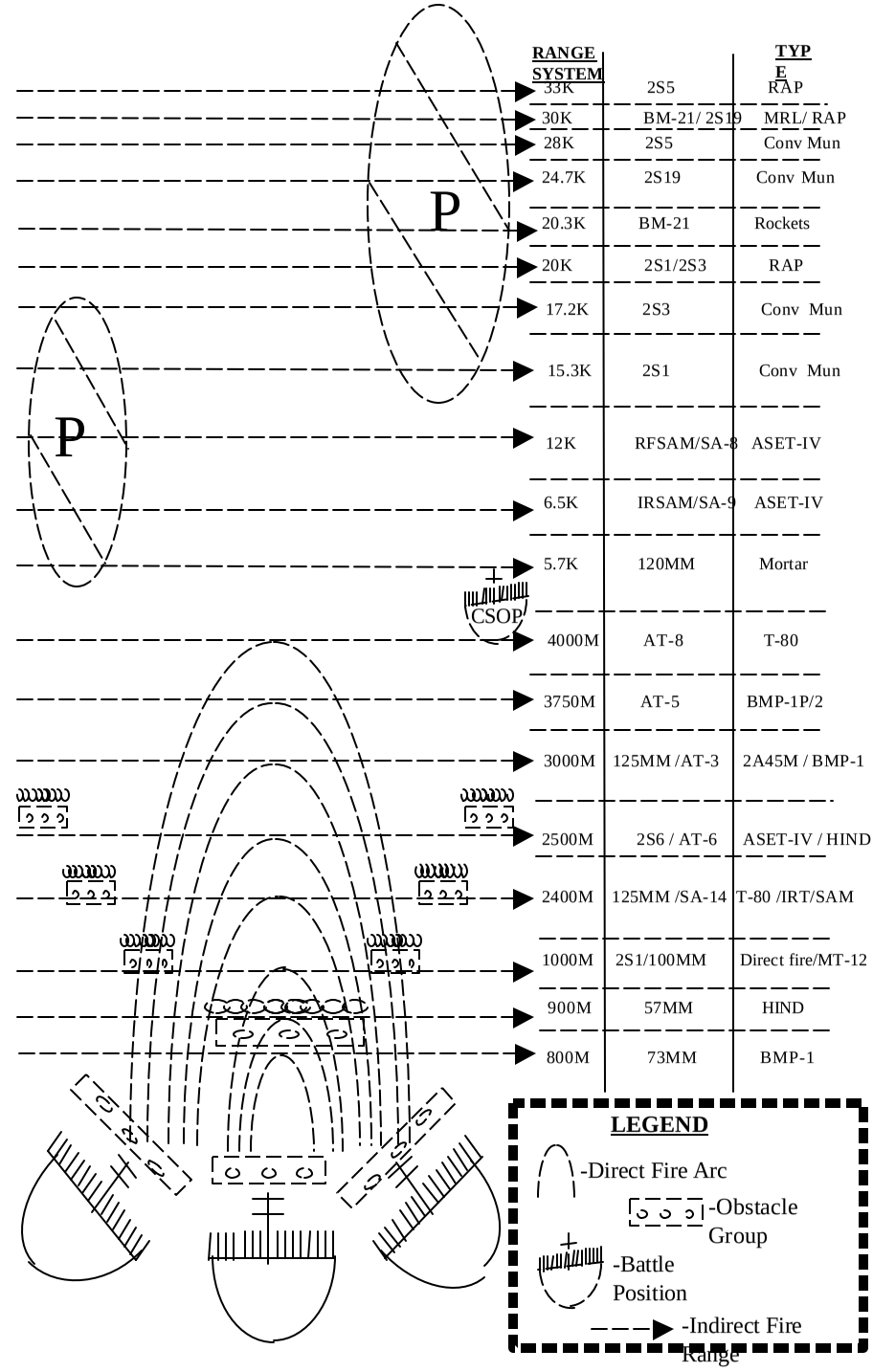
Unit*	Frontage (Normal)	Frontage (Extended)***	Depth
Division	20 - 30 km	Up to 45 km	15 - 20 km
Regiment	10 - 15 km	15(+) km	8 - 10 km
Battalion	5 - 7.5 km	Up to 7.5 km	2 km (Typical) Up to 4 km (Possible)
Company	.5 - 1 km	N/A	.5 km

* Applicable to Motorized/ Mechanized Rifle and Tank Units.

** Hasty Defensive Frontages and Depths are the same as the Offense.

*** Units may deliberately adopt extended defensive frontages under nuclear conditions.

BACK


THREAT WEAPONS RANGES IN THE DEFENSE
RANGE SYSTEM
TYPE
33K 2S5 RAP
30K BM-21/ 2S19 MRL/ RAP
28K 2S5 Conv Mun
24.7K 2S19 Conv Mun
20.3K BM-21 Rockets
20K 2S1/2S3 RAP
17.2K 2S3 Conv Mun
15.3K 2S1 Conv Mun
12K RFSAM/SA-8 ASET-IV
6.5K IRSAM/SA-9 ASET-IV
5.7K 120MM Mortar
4000M AT-8 T-80
3750M AT-5 BMP-1P/2
3000M 125MM /AT-3 2A45M / BMP-1
2500M 2S6 / AT-6 ASET-IV / HIND
2400M 125MM /SA-14 T-80 /IRT/SAM
1000M 2S1/100MM Direct fire/MT-12
900M 57MM HIND
800M 73MM BMP-1
P
P
CSOP
LEGEND
-Direct Fire Arc
-Obstacle Group
-Battle Position
-Indirect Fire Range

CSOP
(Combat Security Outpost)

Key

-BMP

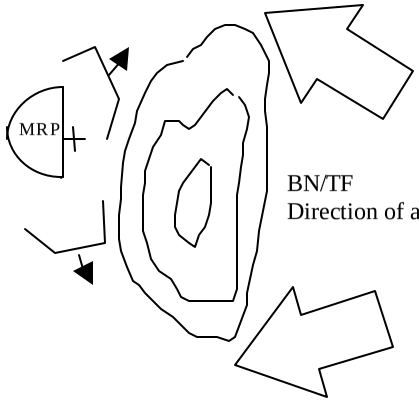
-Tank

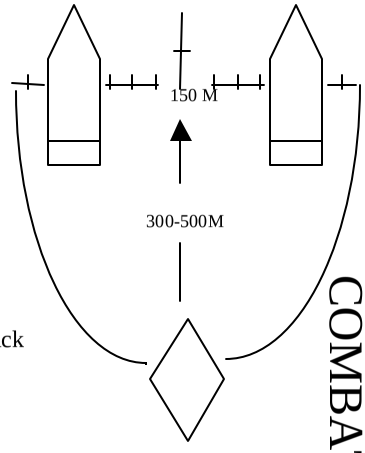
MRP -Motorized Rifle Platoon/3 Vehicles

Composition

- Usually 3 Armored Vehicles
- 1/2 mix most common
- Tanks to rear of BMP's (most cases)

Employment

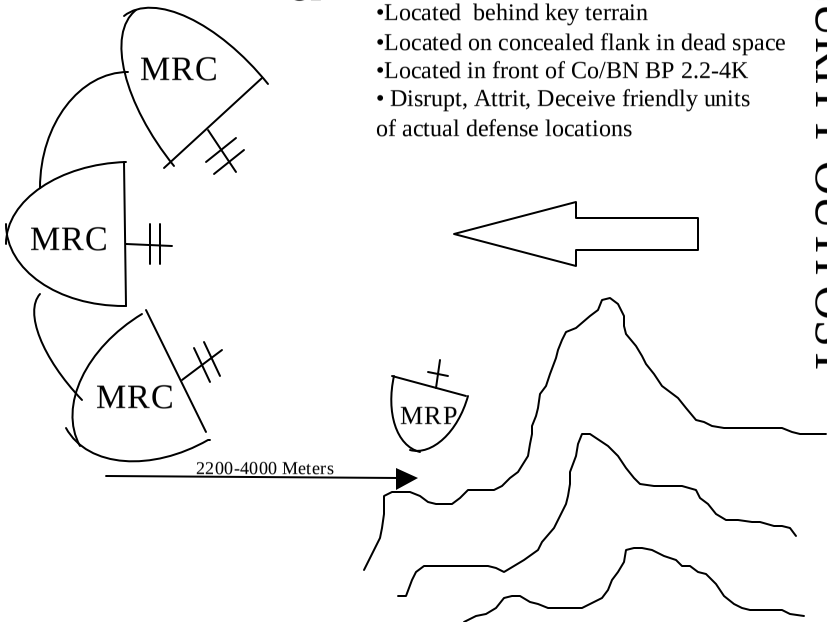




COMBAT SECURITY OUTPOST

or

- Located behind key terrain
- Located on concealed flank in dead space
- Located in front of Co/BN BP 2.2-4K
- Disrupt, Attrit, Deceive friendly units of actual defense locations



MRB IN DEFENSE: HOW THEY FIGHT

DIVISION RECON - Deploys 20-50 km from main defense belt. Inserts DRT's throughout friendly zone. Div Recon conducts active recon to identify avenues of approach and artillery locations to target for Phase 1 counter-preparatory fires.

IRTS - (Independent reconnaissance teams) Occupies High ground with SA-14's, Conducts Air Defense Ambushes along air Avenues Of Approach and augments reconnaissance assets forward of OPFOR Battle Positions.

REGT RECON - Deploys out to 10km in front of the main defense belt. Provides combat information and early warning to the MRR CDR. Semi- static patrols and OP's adjust artillery in support of the deep battle.

CSOP - Delays, inflicts losses. and deceives friendly units about main defensive belt location. Usually 1 Tank/ 2 BMP's, 2200-4400 meters in front of actual BP's.

OBSTACLES - Emplaced to slow down, break up, and force friendly units formations into the fire sack. Bypassing obstacles may be exactly what the enemy wants the friendly forces to do.

FIRE SACK - Area of interlocking fires where enemy wants to hold and destroy friendly units.

MRB SITE - Only 30% of Threat vehicles are in actual OP' s prior to LD. The other 70% are in hide sites
1500m -3k behind actual BP's.

MAIN DEFENSE POSITIONS - MRC defensive positions deploy with platoons 2 up and 1 back or single echelon. Range markers are placed forward to ID friendly units when they enter direct fire range. Individual combat vehicle positions cover obstacles. Dismounts cover obstacles on the flanks.

MRB RESERVE - Consists of AT reserve and MRP and is initially centered behind defensive positions. Once the friendly main effort is determined, the reserve flexes to reinforce the threatened MRC.

COMBINED ARMS RESERVE (CAR) - Consists of MRC (+) initially positioned with the 2nd echelon MRB. CAR CATKs to destroy friendly unit penetrations. Usually consists of a 3/8 MRC with possible AT PLT.

NBC - Persistent agents are used to shape the battlefield by denying avenues of approach to the attacking force or securing flanks of the defense. Non-persistent agents are used in the fire sack.

ARTILLERY - Fires on pre-registered targets with massed fire. Preplanned targets are placed in the vicinity of easily identifiable terrain features. Defensive Phases of fire:

Counter-preparatory fire (counter battery)
Phase 1- Fire interdiction of advancing troops
Phase 2- Fire to repel enemy attack
Phase 3- Fire support of defending troops (FPF)
Phase 4- Fire destruction of enemy during counter-attack

ATTACK HELICOPTERS - Fires from flanks to destroy penetrating forces; and possibly used in cross FLOT deep attacks within supporting artillery range.

ADA - Each MRC position has SA-14s or 2S6. SA-9s are located with CP's and RAG.

THREAT DOCTRINAL TEMPLATE (DEFENSE)

THREAT RECON IN THE DEFENSE

RECONNAISSANCE (DEFENSE)

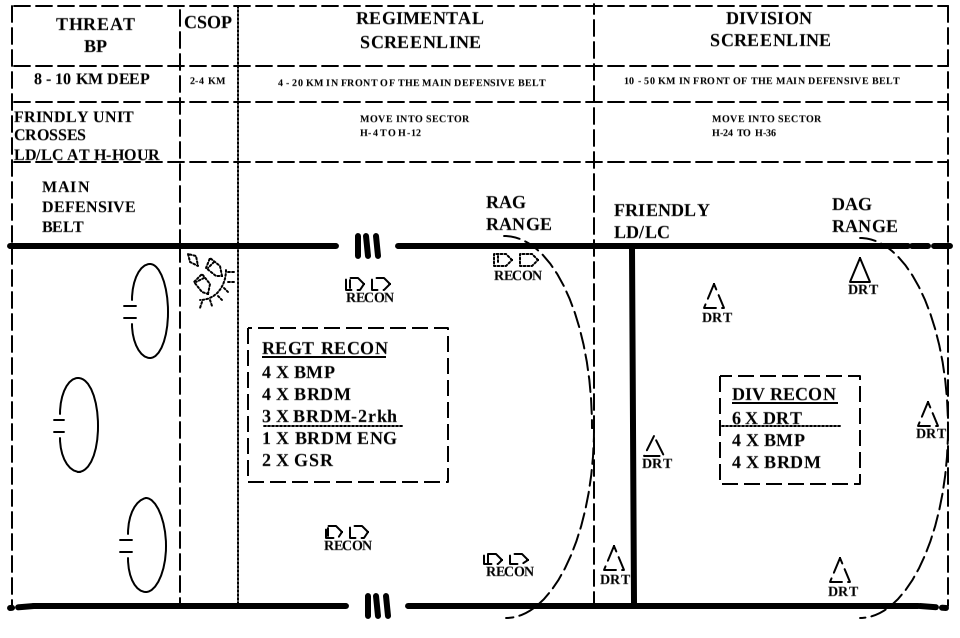
1. Focuses on the Security Zone
2. Emphasis is placed on the use of static OPs
3. May include COPs, artillery posts, listening posts, and ground radar
4. Provide observation for Phase 1, Phase 2, and Phase 3 fires
5. May push CRP or IRP forward of defense to occupy ambush locations or conduct recon missions determined by the Security Zone CDR (ambush unescorted enemy C3 assets and dismounted forces)
6. Recon Detachment may be sent forward to establish contact with the attacking enemy in order to monitor enemy approach, identify the enemy composition, and determine the main avenue of attack
7. Observe enemy actions/confirm or deny enemy courses of action
8. During withdrawal, may use recon as stay-behind force
9. 2nd echelon RGTs or reserves can also deploy assets into the intervals between defense lines

DIVISION RECONNAISSANCE (DEFENSE)

1. Establish screen line 24 - 36 hours prior to friendly unit LD
2. In MRB defense, normally no DIV vehicles employed; up to 6 DRT teams
3. Screen line will be out to DAG range
4. Provides early warning
5. DRTs provide intel for defense commander, and may recommend fire missions (Phase 1 and 2 fires)

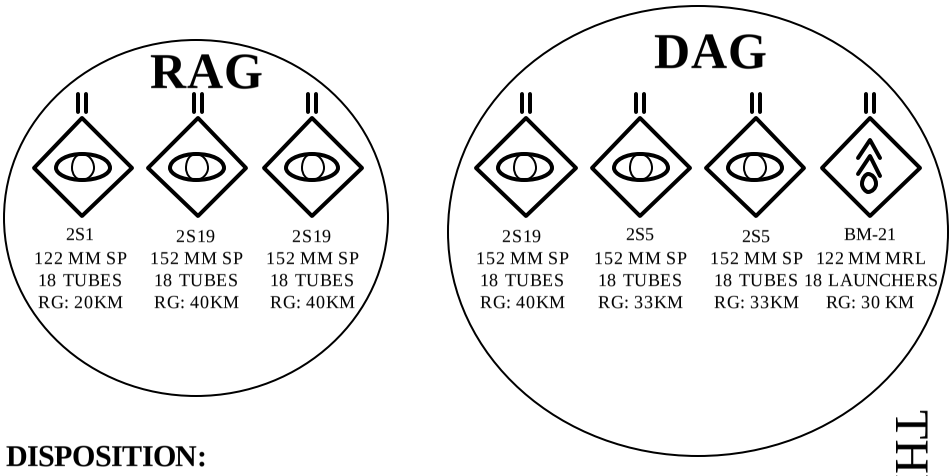
REGIMENTAL RECONNAISSANCE (DEFENSE)

1. Establish screen 4 - 12 hrs prior to friendly unit LD
2. Screen line out to RAG range
3. Provide security for 1st echelon units
4. Counter-recon uses "looker-killer" technique, BRDMs spot enemy and BMPs make contact.
5. Assist in calls for fire (Phase 2 and Phase 3 fires), CAS, FASCAM, and chemical employment
6. BRDM-2rkhs may be used to confirm chemical targets
7. Will engage follow-on CSS, arty, FARPs, etc.

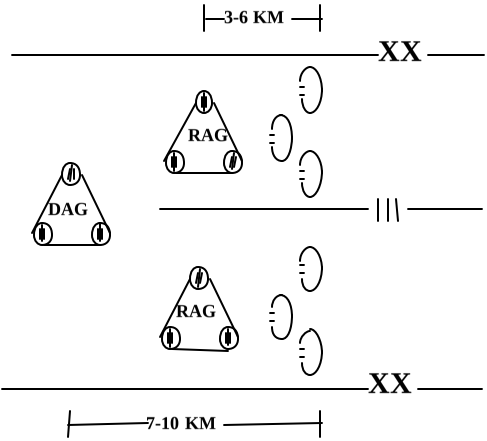


ARTILLERY IN THE DEFENSE

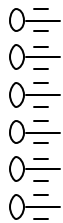
COMPOSITION:

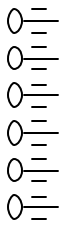


DISPOSITION:

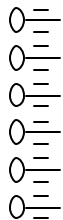


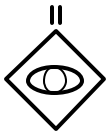
THREAT ARTY IN THE DEF





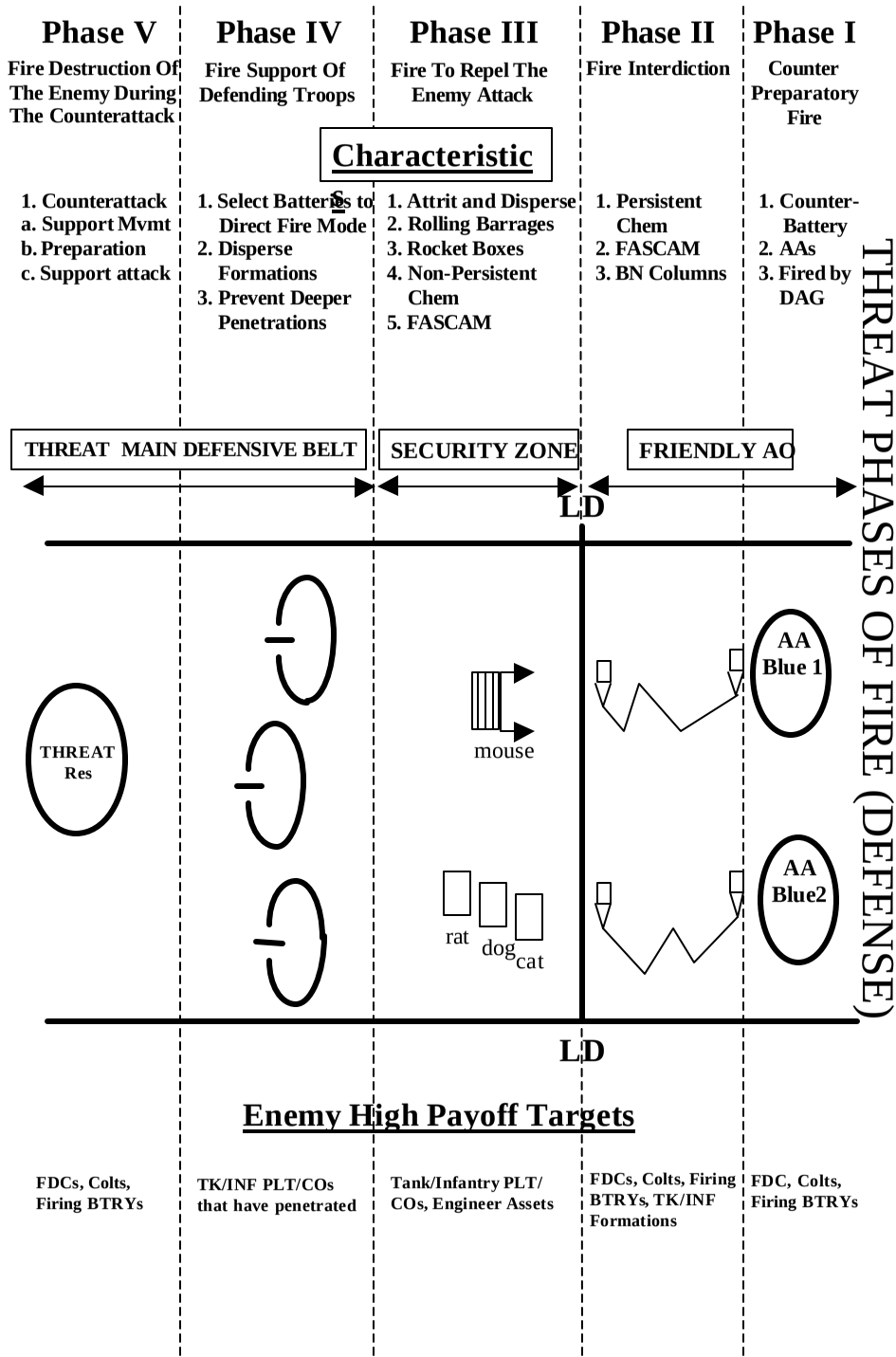
DIRECTION OF FIRE





1 BN = 3 BTRYS

1. **Artillery battalions shoot by battalion on the battlefield, not as individual batteries, IAW doctrine's massing of fire.**
2. **Artillery Battalions deploy into battery firing lines.**
3. **Tubes are arrayed 6 on-line.**
4. **Batteries are typically arranged in a triangle formation to increase effectiveness massing of fires.**


Phase V
Fire Destruction Of The Enemy During The Counterattack
Phase IV
Fire Support Of Defending Troops
Phase III
Fire To Repel The Enemy Attack
Phase II
Fire Interdiction
Phase I
Counter Preparatory Fire
Characteristic
1. Counterattack
a. Support Mvmt
b. Preparation
c. Support attack
1. Select Batteries to Direct Fire Mode
2. Disperse Formations
3. Prevent Deeper Penetrations
1. Attrit and Disperse
2. Rolling Barrages
3. Rocket Boxes
4. Non-Persistent Chem
5. FASCAM
1. Persistent Chem
2. FASCAM
3. BN Columns
1. Counter-Battery
2. AAs
3. Fired by DAG
THREAT PHASES OF FIRE (DEFENSE)
THREAT MAIN DEFENSIVE BELT
SECURITY ZONE
FRIENDLY AO
LD
THREAT Res
mouse
AA Blue 1
AA Blue2
rat
dog
cat
LD
Enemy High Payoff Targets
FDCs, Colts, Firing BTRYs
TK/INF PLT/COs that have penetrated
Tank/Infantry PLT/ COs, Engineer Assets
FDCs, Colts, Firing BTRYs, TK/INF Formations
FDC, Colts, Firing BTRYs

OFFENSIVE FRONTAGES & DEPTHS

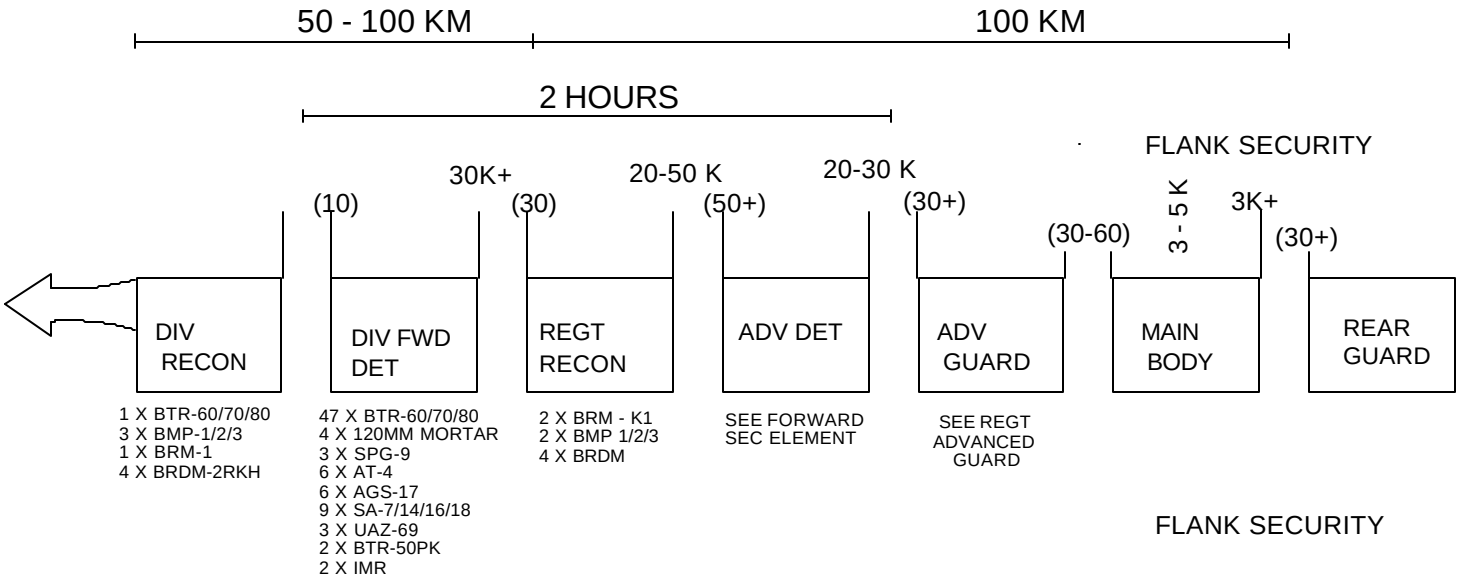
Unit*	Zone of Attack Frontage	Depth
Division	15-25 km (Normal Conditions) 6-10 km (Breakthrough)**	30-35 km
Regiment	3-8 km 4-5 km (Most Typical)	10-15 km
Battalion	2-3 km 1-2 km (Formation Frontage)	3 km
Company	.5-.8 km	N/A

***** **Applicable to Motorized / Mechanized Rifle and Tank Units.**

****** **Breakthrough Frontages are rarely used.**

BACK

MRD MARCH FORMATION



K = KILOMETERS

( ) = NUMBER EQUALS TIME
MRD MAY TRAVEL UP TO THREE AXIS OF ADVANCE

* = FLANK SECURITY IS PLATOON SIZED AND SUBORDINATE TO THE ADJACENT REGIMENT/COMBAT FORMATION.

DIVISION FORWARD DETACHMENT MAY BE DEPLOYED BY THE DIVISION COMMANDER AND MAY TRAVEL ON IT'S OWN AXIS OF ADVANCE. IT MAY BE A MRB OR A T.R. WHICH COMES FROM THE MAIN BODY.

BACK

THREAT RECONNAISSANCE
DIVISION AND REGIMENTAL

DIV RECON 24-48 HOURS

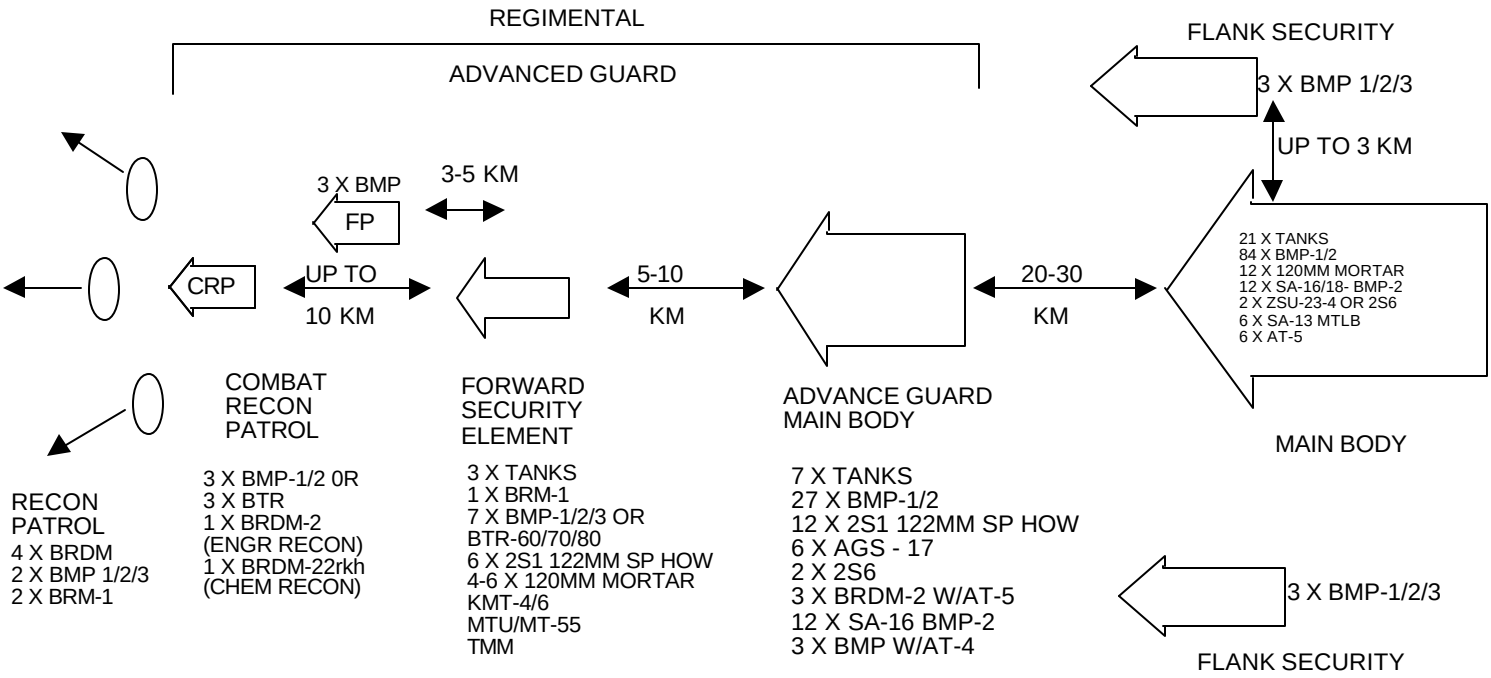
- **COMPOSTION:**
  - **Mounted**
    - **4 BMP**
    - **4 BRDM**
    - **1 GSR**
    - **6 DRT**
  - **Dismounted LRRC**
    - **100 Infantry**
- **TASK: Route & Area Recon for Division**
- **PURPOSE: Determine strength, composition, and disposition of enemy; trigger MRD deep assets**
- **OTHER: Avoid contact, DRTs, Air Assault (?)**

REG RECON 6-12 HOURS

- **COMPOSTION:**
  - **4 BMP**
  - **4 BRDM**
  - **2 Rkh**
  - **1 GSR**
  - **1 IRD (Engineer)**
- **TASK: Route and Area Recon for Regiment**
- **PURPOSE:**
  - **Determine strength, composition, and disposition of enemy**
  - **Confirm Div Recon reports**
- **OTHER: May fight for intelligence**

BACK

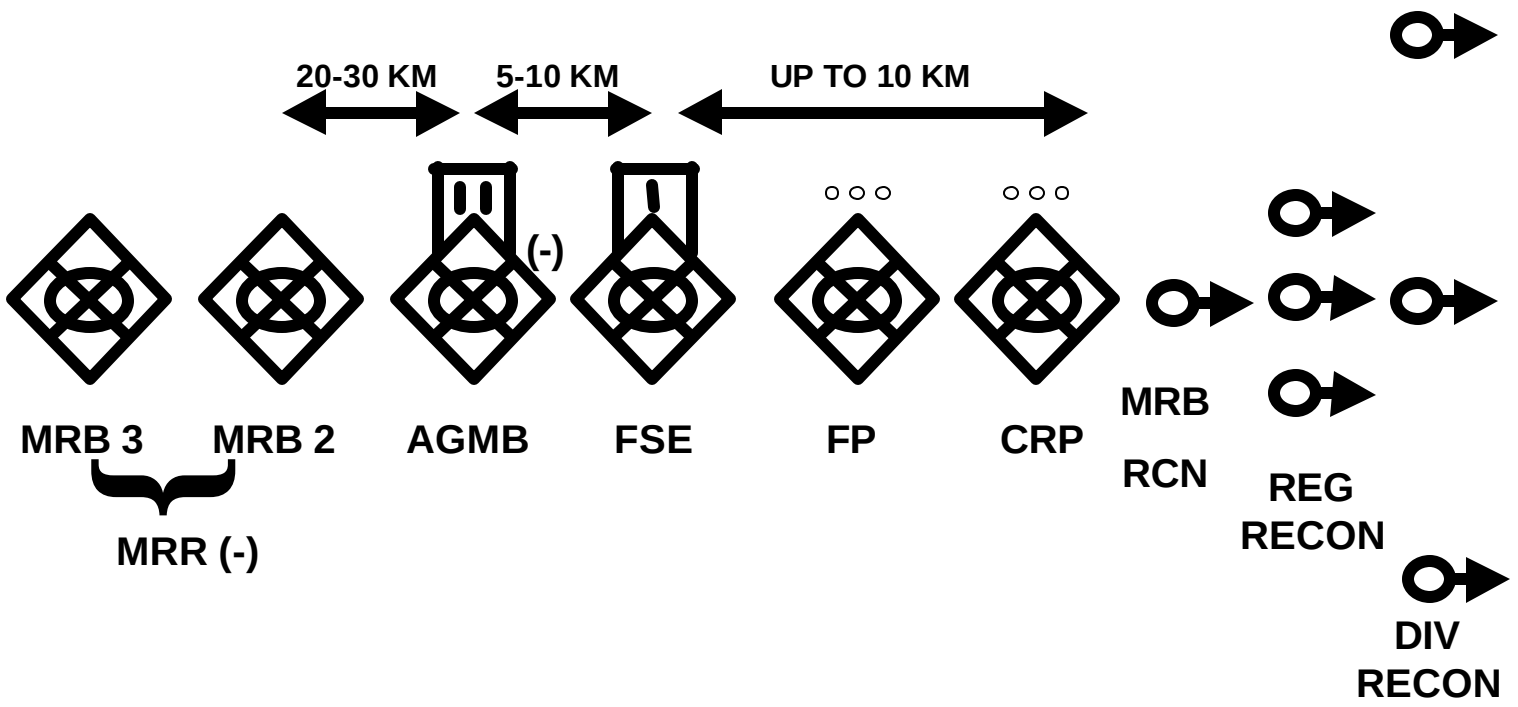
MRR IN MARCH FORMATION



NOTE: There may be up to three CRP's in the forward area. The use of a FORWARD PATROL (reinforced motor / mechanized rifle platoon) may occur between the CRP and FSE along the main avenue of approach. FORWARD PATROL acts as security for the FSE. MRB recon platoon may also be used forward of CRP in the AG battalion.

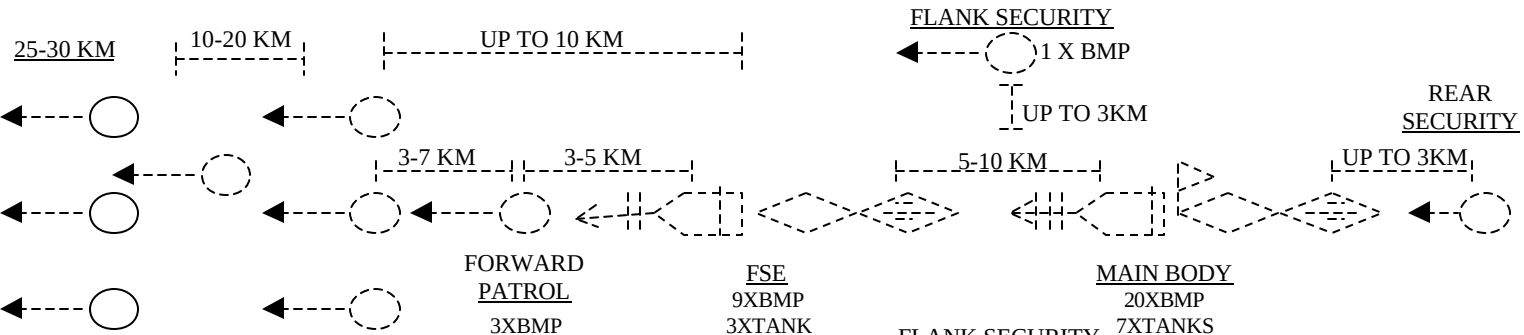
BACK

ENEMY MARCH FORMATION



BACK

MRB IN ADVANCED GUARD FORMATION(BMP or BTR)



RGT RECON
- CONFIRM OR DENY DIV RECONS INTEL

MRB RCN
- CONDUCT REAL-TIME RECON

CRP
- CONDUCT RECON
- ENGAGE AS LAST RESORT
- BREACH OBSTACLES

FORWARD PATROL
- PERFORMS SECURITY MISSION FOR FSE
- SIZE: REINFORCED SQD TO REINFORCED PLATOON

FSE
- PERFORM MARCH SECURITY FOR MAIN BODY
- EST CONDITIONS FOR AGMB SUCCESS

FLANK/REAR SECURITY
- PERFORM SECURITY FOR MAIN BODY
- SIZE: up to REINFORCED PLATOON

ADVANCED GUARD MISSION: Ensure the unhindered secure advance of the MRR by fixing or delaying all enemy to allow MRR to deploy. Moves on MRR march route, performs security mission for MRR and seeks to engage enemy.

FORWARD DETACHMENT MISSION: Seize key OBJs in advance of parent unit to facilitate fastest advance of parent unit. Given support and reports to DIV CDR, moves on separate route from parent unit, avoids contact until OBJ.

BACK

COMBAT RECONNAISSANCE PATROL

•COMPOSTION: 3 BMP (May include a Tank)

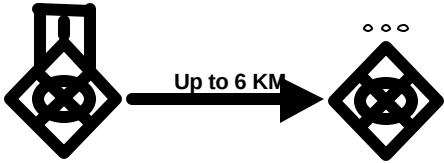
•TASK: Route Recon for lead MRB

•PURPOSE: Allow FSE time to maneuver

•OTHER:

- A mission, not a unit
- May not always attack, may attempt bypass to gather intelligence
- Can recon or fix with direct / indirect fires to est conditions for FSE employment
- MRB may send out more than one CRP

FORWARD SECURITY ELEMENT



•COMPOSTION:

- •10 BMP
- •3 Tanks
- •6 120mm
- •6 2S1(possible)
- •ENG, ADA

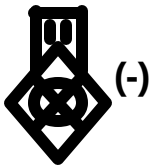
•TASK: Fix, Suppress, or Destroy Lead CO/TM

•PURPOSE: Allow AGMB time to seize Immediate Objective

•OTHER:

- •FP can be formed to act as Advance Guard (Travelling Overwatch) of FSE
- •FSE may also include an AT element
- •2S1s may be used in Direct Fire role

ADVANCED GUARD MAIN BODY



AGMB

•COMPOSTION:

- •27-30 BMP
- •7 Tanks
- •12-18 2S1
- •AT5s, ADA, Eng

•TASK: Destroy US Task Force/Seize OBJ/Breach for MRR

•PURPOSE:

- •Allow uninterrupted advance of MRR
- •Create favorable conditions for the MRR to envelop or bypass US Main Defense

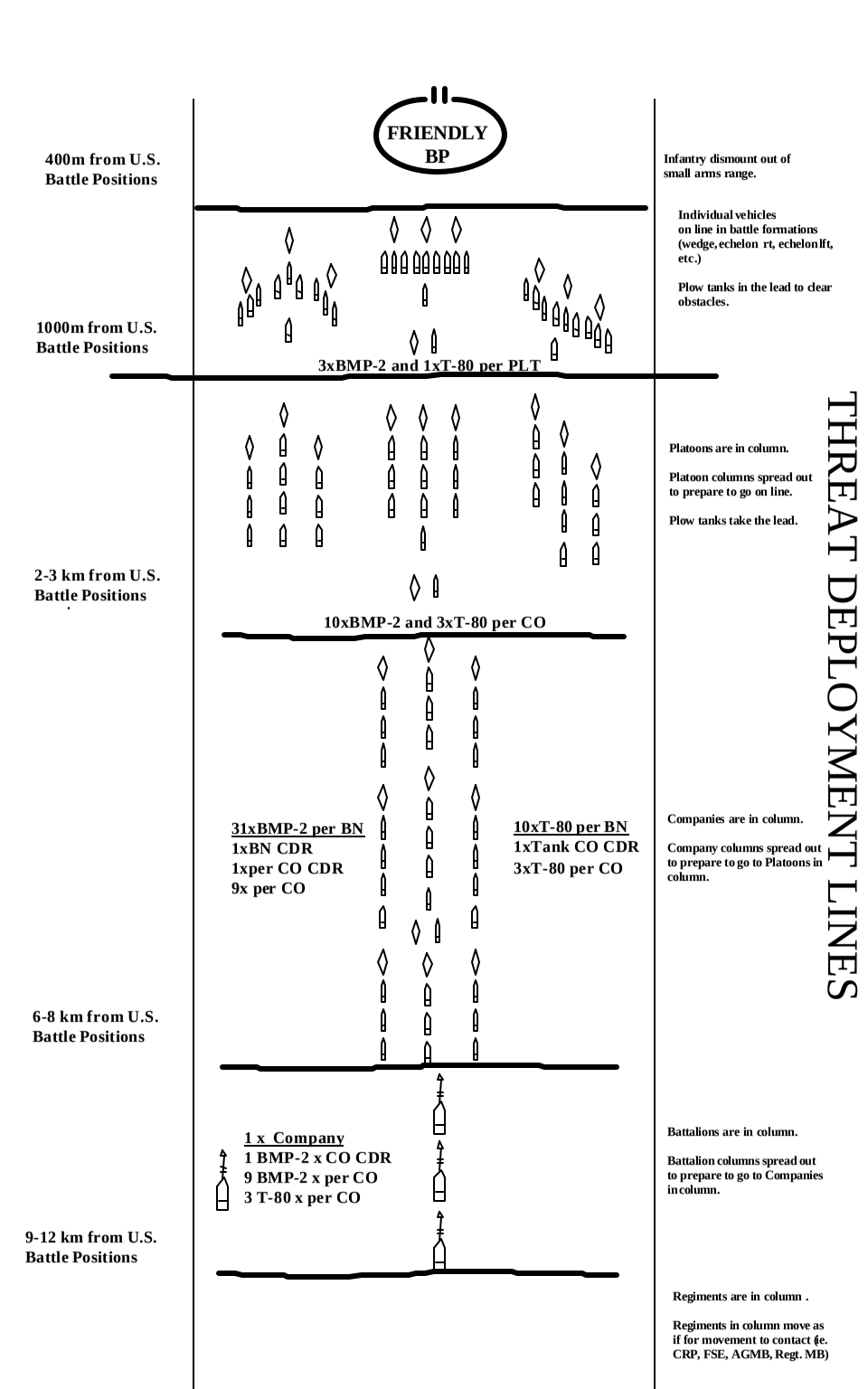
BACK

THREAT OFFENSIVE BATTLE DRILL

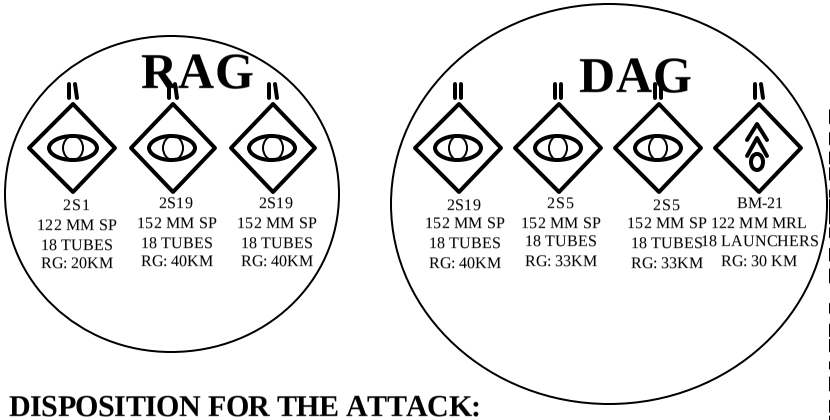
NOTE: The THREAT will deploy an MRC to set a firing line in order to suppress enemy forces while the remaining 2 x MRCs maneuver to destroy or bypass. The trail MRC will reinforce the FSE if required.

NOTE: AG Bns may have 4 X MRCs. (1 X FSE and 3 X AGMB)

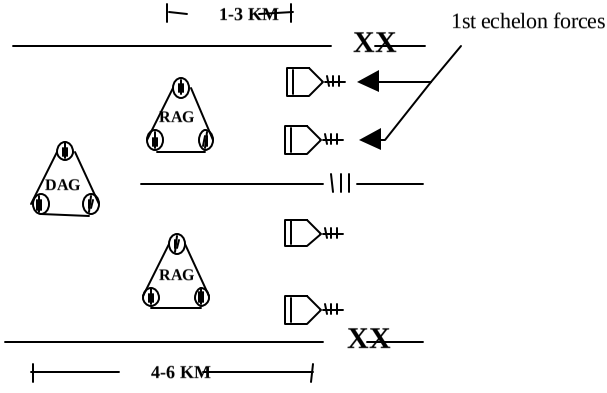
THREAT DEPLOYMENT LINES



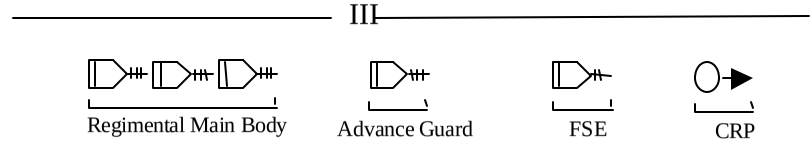
COMPOSITION:

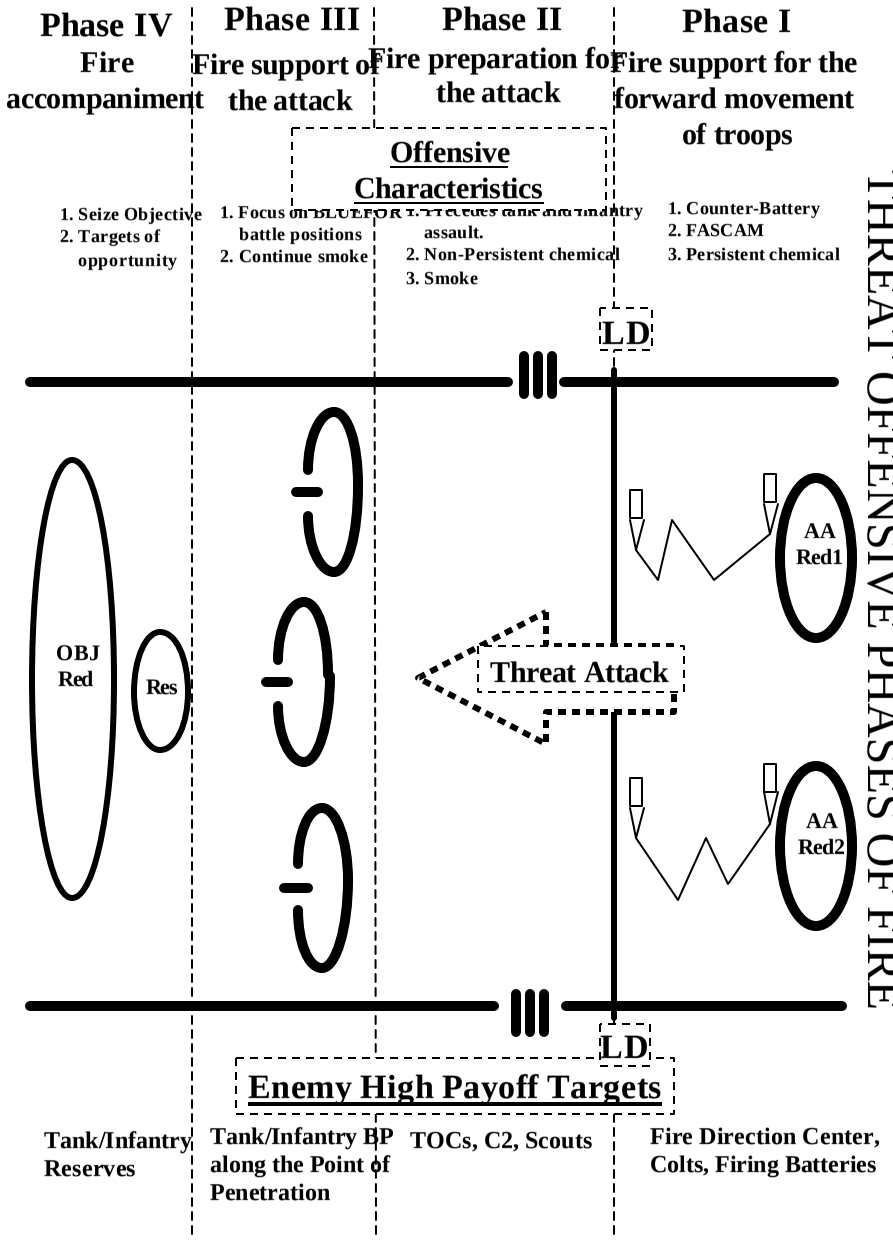


DISPOSITION FOR THE ATTACK:



DISPOSITION FOR THE MEETING ENGAGEMENT:




Phase IV
Fire accompaniment
Phase III
Fire support of the attack
Phase II
Fire preparation for the attack
Phase I
Fire support for the forward movement of troops
Offensive Characteristics
1. Seize Objective
2. Targets of opportunity
1. Focus on BLUFOR 1. Precedes tank and infantry assault.
battle positions
2. Continue smoke
2. Non-Persistent chemical
3. Smoke
1. Counter-Battery
2. FASCAM
3. Persistent chemical
LD
OBJ Red
Res
AA Red1
Threat Attack
AA Red2
LD
Enemy High Payoff Targets
Tank/Infantry Reserves
Tank/Infantry BP along the Point of Penetration
TOCs, C2, Scouts
Fire Direction Center, Colts, Firing Batteries
THREAT OFFENSIVE PHASES OF FIRE

Movement Support Detachment Missions

1. Conduct route preparation
2. Conduct breaching operations to facilitate the rapid movement of the main force
   a. Construction of bypasses is preferred method
   b. Construct passage through debris

Offensive Organization

1. During MRR offense, 2 X MSD's will be employed
   a. 1 x MSD will travel on main routes under protection of the FSE of AG or FD
   b. 1 x MSD will travel with lead MRB in regimental main body
2. During MRB offense, 1 X MSD will be employed

Camouflage Effort

1. Offense
   a. Selection of terrain for screening
   b. Use of concealed routes
   c. Use of natural or man-made camouflage screens
2. On the march
   a. Select routes that minimize dust and tracks
   b. Movement at night, fog, and periods of reduced visibility, including smoke and obscurants
   c. Convoy and light discipline

Composition of the MSD

1. Teams
   a. 1 x RECON and obstacle clearing group
   b. 1-2 x road / bridge construction and repair groups
   c. 1 x route marking group
   d. 1 or more MRP or TP
   e. Chemical scouts
2. Equipment (1 or 2 of each)
   a. DIM mine detectors
   b. BAT clear routes
   c. IMR armored engineer tractors
   d. Tanks with KMT-4 / 6 or KMT-5M roller plow
   e. Tanks with BTU blades
   f. MTU-20 / MT-55 tank launched bridges
   g. TMM truck launched bridges
   h. Truck mounted cranes

Breaching TTP

1. OPFOR bypass when possible
2. CRP marks obstacles to be bypassed
3. May be breached later by follow on forces
4. FSE with Support Detachment, moves forward
5. FSE focus on providing obstruction and suppressive fires.
6. Clear one lane for each MRB to follow, two lanes if possible.
7. During an MRB in stride breach/MRC deliberate breach the MRB commander assigns one MRC each for security, breach , and assault force.
8. One MRC performs all three steps with own assets during an MRC in stride breach (preferred method).
9. Obstacle breaches are marked with VS-17 panels at the front (L/R) and rear (L) and green smoke.

THREAT ANTITANK GUNS/MISSILES

WPNS SYSTEMS	RPG-7	RPG-18	SPG-9	AGS-17	AT-2 SWATTER	AT-3 SAGGER	AT-4 SPIGOT	AT-5 SPIRAL	AT-6 SPANDREL	AT-7 SAXHORN	AT-8 SONGSTER	T-12	ASU-85
VEHICLE	MAN PACK	MAN PACK	MAN PACK TRUCK	MAN PACK VEHICLE	BMP HIP/HIND	BMP HIP/HIND	BTR	BRDM HIP/HIND	BRDM HIP/HIND	MAN PACK	T-64 T-80	TOWED	VEHICLE
RANGE (M)	300/500 (2)	200	1000	1730 MAX	500 MIN 3000 MAX	500 MIN 3000 MAX	70 MIN 2000 MAX	100 MIN 4000 MAX	100 MIN 5000 MAX	1000 MAX	4000 MAX	2000	15000 +
CALIBER WARHEAD MM	85/70 (1) HEAT	64 HEAT	73 HEAT	30 FRAG HEAT	148 HEAT	120 HEAT	134 HEAT	150 HEAT	150 HEAT	HEAT	HEAT	100, HEAT HVAPFSDS	85, HEAT, FRAG, SMOKE
UNIT OF FIRE RD'S	20	100 PER COMPANY	80	89	BRDM 10 HIP/HIND 4	BRDM 14 HIP/HIND	4 LCHR BTR BN	BRDM HIP/HIND 4	BRDM 15 HIP/HIND 4			60 RDS GUN	7-8 RDS MIN
TIME OF FLIGHT	4.5 SEC MAX	4-6 SEC MAX	2.5 SEC MAX	SLOW	23 SEC RANGE	25 SEC RANGE	11 SEC RANGE	20 SEC RANGE	11 SEC RANGE		SUPER-SONIC	9 SEC RANGE	
(MM)	330	375	400		500 +	400 +	600	600	600 +		700-800	225 (SABOT) 400 HEAT	100 HVAP-T 400 HEAT
FIRE CONTROL	OPTICAL	OPTICAL	IR PASSIVE	TELESCOPIC SIGHT	SACLOS MCLOS	MCLOS SACLOS	SACLOS	SACLOS	SACLOS	SACLOS	SACLOS	IR	DIRECTFIRE TELESCOPE IR

BACK

THREAT ARMOR

		T-55	T-62	T-64	T-72	T-80
ARMAMENT ARMOR PENETRATION (MM) (RANGE)		100MM (DOIT 25) 280 HVAP 390 HEAT (1500M) 7.62 MM PKT 8 (1000M) 12.7MM DSHE 20 (1000M)	115MM SMOOTHBORE 280 HVAP/450 HEAT 7.62 MM PKT 8 (1000M) 12.7MM DSHE 20 (1000M)	125MM (RAPIRA3) 300 HVAPFSDS 475 HEAT (1500M) 7.62 MM PKT 8 (1000M) 12.7MM NSVT 20 (1000M)	125MM (RAPIRA3) 300 HVAPFSDS 475 HEAT (1500M) 7.62 MM PKT 8 (1000M) 12.7MM NSVT 20 (1000M)	125MM SMOOTHBORE 400+ HVAPFSDS 500 HEAT (1500M) 7.62 MM PKT 8 (1000M) 12.7MM NSVT 20 (1000M)
NIGHT VISION		DRIVER IR GUNNER IR CDR	DRIVER IR GUNNER IR CDR	DRIVER IR GUNNER PASSIVE CDR LASER	DRIVER IR GUNNER PASSIVE CDR LASER	IR (ALL)
CBR PROTECTION		PAZ NO CHEMICAL	PAZ NO CHEMICAL	CBR FILTERATION OVERPRESSURE	CBR FILTERATION OVERPRESSURE	CBR FILTERATION OVERPRESSURE
ARMOR PROTECTION (MM)	**(HULL)**	99	102	200 (GLACIS)	200 (GLACIS)	UNKNOWN
	(TURRET)	203	242	275	275	UNKNOWN
FORD/SNORKEL (M)		1.4 / 5.5	1.4 / 5.5	1.4 / 5.5	1.4 / 5.5	1.4 / 5.5
SPEED (KPH) LAND / WATER		50	50	50	60	85
VERTICLE STEP (M)		0.8	0.8	0.91	0.91	0.8
WEIGHT (MT)		38	38	38	41	42 W/O 45 W/RA
ROAD RANGE (KM)		500	300	300	400	485
TRENCH CROSSING		2.7	2.7	2.7	2.7	2.7
GRADE (DEGREE)		30	30	30	30	30

BACK

THREAT APC'S/IFV'S

		BMP 1	BMP/2	BTR-60/70/80	BRDM-2	BMP-3
ARMAMENT ARMOR PENETRATION (MM) (RANGE)		73MM (2A28) 300 (800M) AT-3 SAGGER 400 (3000 M) 7.62MM PKT 8 (500M)	30MM 30 (1000M) AT-5 SPANDREL 600 (4000M) 7.62MM PKT 8 (500M)	14.5MM KPVT(PB) 20 (1000M) 7.62MM PKT 8 (500M)	14.5MM KPVT 20 (1000M) 7.62MM PKT 8 (500M)	100MM 30MM COAX 7.62MM PKT (3) AT-10 MAIN GUN
NIGHT VISION		DRIVER IR GUNNER PASSIVE CDR PASSIVE	DRIVER IR GUNNER PASSIVE CDR PASSIVE	DRIVER IR CDR IR	DRIVER IR CDR IR	UNKNOWN
CBR PROTECTION		CBR FILTERATION OVERPRESSURE	CBR FILTERATION OVERPRESSURE	CBR FILTERATION OVERPRESSURE	CBR FILTERATION OVERPRESSURE	CBR FILTERATION OVERPRESSURE
ARMOR PROTECTION (MM)	**(HULL)**	19	19	9/10	14	UNKNOWN
	(TURRET)	23	23	7	7	UNKNOWN
CREW/PASSENGER		3/8	3/7	3/8	2-4/4	3/7 POSSIBLE
FORD/SNORKEL (M)		AMPHIB	AMPHIB	AMPHIB	AMPHIB	AMPHIB
SPEED (KPH) LAND / WATER		70/10	70/10	80/10	100/10	70/10
VERTICLE STEP (M)		0.8	0.8	0.4	0.4	0.8
WEIGHT (MT)		7.5	7.5	10.2 (11)	7.0	18.7
ROAD RANGE (KM)		320	320	500	750	600
TRENCH CROSSING		1.6	1.6	2	1/6	2.5
GRADE (DEGREE)		30	30	30	30	35

BACK

THREAT ARTILLERY/MORTARS

WPN SYSTEM	RANGE	CALIBER	AMMUNITION	RATE OF FIRE	UNIT OF FIRE	ORGANIZATION
D-30 HOW	15300	122MM	HE, FRAG, HEAT ILLUM, SMOKE	7-8	80	HOW BATTALION BTR (MRR)
D-20 HOW	17300 22,000 RAP	152MM	HE, FRAG, HEAT ILLUM, SMOKE, NUKE, CHEM, RAP	5	60	MRD ARTY REG MRD
2S1 SP HOW	15300	122MM	HE, FRAG, HEAT ILLUM, SMOKE CHEM, RAP	5-8	80	HOW BATTALION BMP (MRR)
2S3 SP HOW	17300 30,000 RAP	152MM	HE, FRAG, HEAT ILLUM, SMOKE, NUKE, CHEM, RAP	4	60	ARTILLERY REGIMENT MRD/TD
2S5 SP HOW	27000 35,000 RAP	152MM	HE, FRAG, HEAT ILLUM, SMOKE, NUKE, CHEM, RAP	4	--	FRONT/ARMY GUN BN
M1976 GUN	27000 35,000 RAP	152MM	HE, FRAG, NUKE	---	80	FRONT/ARMY GUN BN
BM-21 MRL	20500	122MM	HE, FRAG, CHEM	40 (20 SEC)	120	ARTILLERY REG OF MRD OR TD
M1943 MORTAR	5700	120MM	HE, FRAG, CHEM SMOKE, ILLUM	9	80	MORTAR BATTERY MRB
SS-21	120 KM	-----	HE, CHEM, NUKE	---	ONE MISSLE/ TEL VEHICLE	FROG REG AT FRONT/ARMY

BACK

THREAT ANTITANK GUNS/MISSILES

WPNS SYSTEMS	RPG-7	RPG-18	SPG-9	AGS-17	AT-2 SWATTER	AT-3 SAGGER	AT-4 SPIGOT	AT-5 SPIRAL	AT-6 SPANDREL	AT-7 SAXHORN	AT-8 SONGSTER	T-12	ASU-85
VEHICLE	MAN PACK	MAN PACK	MAN PACK TRUCK	MAN PACK VEHICLE	BMP HIP/HIND	BMP HIP/HIND	BTR	BRDM HIP/HIND	BRDM HIP/HIND	MAN PACK	T-64 T-80	TOWED	VEHICLE
RANGE (M)	300/500 (2)	200	1000	1730 MAX	500 MIN 3000 MAX	500 MIN 3000 MAX	70 MIN 2000 MAX	100 MIN 4000 MAX	100 MIN 5000 MAX	1000 MAX	4000 MAX	2000	15000 +
CALIBER WARHEAD MM	85/70 (1) HEAT	64 HEAT	73 HEAT	30 FRAG HEAT	148 HEAT	120 HEAT	134 HEAT	150 HEAT	150 HEAT	HEAT	HEAT	100, HEAT HVAPFSDS	85, HEAT, FRAG, SMOKE
UNIT OF FIRE RD'S	20	100 PER COMPANY	80	89	BRDM 10 HIP/HIND 4	BRDM 14 HIP/HIND	4 LCHR BTR BN	BRDM HIP/HIND 4	BRDM 15 HIP/HIND 4			60 RDS GUN	7-8 RDS MIN
TIME OF FLIGHT	4.5 SEC MAX	4-6 SEC MAX	2.5 SEC MAX	SLOW	23 SEC RANGE	25 SEC RANGE	11 SEC RANGE	20 SEC RANGE	11 SEC RANGE		SUPER-SONIC	9 SEC RANGE	
(MM)	330	375	400		500 +	400 +	600	600	600 +		700-800	225 (SABOT) 400 HEAT	100 HVAP-T 400 HEAT
FIRE CONTROL	OPTICAL	OPTICAL	IR PASSIVE	TELESCOPIC SIGHT	SACLOS MCLOS	MCLOS SACLOS	SACLOS	SACLOS	SACLOS	SACLOS	SACLOS	IR	DIRECTFIRE TELESCOPE IR

BACK

THREAT HELICOPTERS

AIRCRAFT	MI-2 HOPLITE	MI-6 HOOK	MI-8/17 HIP	MI-24 HIND	MI-26 HALO	MI-28 HAVOC	KA-? KOKUM
MISSION	COMMAND/CONTROL RECONNAISANCE	TRANSPORT	ATTACK TRANPORT ECM	ATTACK TRANSPORT	TRANSPORT	ATTACK	AIR TO AIR
ARMAMENT	12.7MM MG 2X ROCKET PODS	12.7MM MG	12.7MM MG 6X ROCKET PODS 4X AT-2,3,6 4X 250 KG BOMBS 2X 500 KG BOMBS	12.7MM MG 30MM CANNON 4X ROCKET POD 4X AT-2,3,6 4X 250 KG BOMBS 2X 500 KG BOMBS	NONE	30MM CANNON ROCKET PODS 16X ATGM'S AAM'S	30MM CANNON AAM'S
CREW	1	5	2	3	5	2	2
PASSENGER	6-8	65	24	8-10	100 +	NONE	NONE
SPEED (KM/H)	210	300	250	320	300	300	350
COMBAT RADIUS (KM)	170	300	200	160	370	240	250

AIRCRAFT	MIG-27 FLOGGER	SU-17 FITTER	SU-24 FENCER	SU-25 FROGFOOT
MISSION	GROUND ATTACK	GROUND ATTACK	DEEP INTERDICTION	GROUND ATTACK
ARMAMENT	30MM GATLING GUN 3,000 KG BOMBS ASM'S NUCLEAR WEAPONS	2X 30MM GUNS 3,000 KG BOMBS ASM'S ROCKET PODS NUCLEAR WEAPONS	30MM GATLING GUNS 2,500 KG BOMBS ASM'S NUCLEAR WEAPONS	2X 30MM GUNS 4,000 KG BOMBS ROCKET PODS AAM'S
CREW	1	1	2	1
SPEED (KM/H)	980	1200	1250	475
RADIUS (KM)	800	700	1800	550

BACK

MANEUVER

- ARMY OPERATIONS
- WEAPONS RANGES
- LIGHT/AIRBORNE/AIR ASSAULT INFANTRY ORGANIZATION
- RANGER AND MECHANIZED INFANTRY ORGANIZATION
- ARMOR BATTALION/COMPANY & HHC ORGANIZATION
- SEQUENCE OF THE ATTACK
- DEFENSIVE FRAMEWORK & SEQUENCE (TYPICAL)
- BATTLE POSITION OR SECTOR? DEFENSIVE CONSIDERATIONS
- FIRE CONTROL TECHNIQUES
- AVIATION BRIGADE ORGANIZATIONS
- AVIATION
- HELICOPTER CHARACTERISTICS
- ATTACK HELICOPTER BATTALION OPERATIONS
- ATTACK HELICOPTER BN EMPLOYMENT TECHNIQUES
- WEAPONS CONFIGURATIONS
- ATTACK HELICOPTER WEAPON SYSTEMS DATA
- AIR ASSAULT OPERATIONS
- UNIQUE ASPECTS OF AIR ASSAULT OPERATIONS
- AIR ASSAULT PROBLEMS AND CHALLENGES
- CONSOLIDATED OPERATIONAL DEFINITIONS & TASK LIST
- CONSOLIDATED OPERATIONAL DEFINITIONS & TASK LIST
- CONSOLIDATED OPERATIONAL DEFINITIONS & TASK LIST
- CONSOLIDATED OPERATIONAL DEFINITIONS & TASK LIST

ARMY OPERATIONS

TENETS
- INITIATIVE
- AGILITY
- DEPTH
- SYNCHRONIZATION
- VERSATILITY

DEFENSIVE CHARACTERISTICS
- PREPARATION
- SECURITY
- DISRUPTION
- MASS AND CONCENTRATION
- FLEXIBILITY

DEFENSIVE PATTERNS
- MOBILE DEFENSE
- AREA DEFENSE

OFFENSIVE CHARACTERISTICS
- SURPRISE
- CONCENTRATION
- TEMPO
- AUDACITY

FORMS OF TACTICAL OFFENSE
- MOVEMENT TO CONTACT
- ATTACK
- EXPLOITATION
- PURSUIT

FORMS OF MANEUVER
- FRONTAL ATTACK
- INFILTRATION
- TURNING MOVEMENT
- ENVELOPMENT
- PENETRATION

BACK

WEAPONS RANGES

TYPE WEAPON	MAX EFFECTIVE/PLANNING RANGE (meters)
M16A2	580 / 400
M249 SAW	1000 / 600
M203	350 AREA / 350 160 POINT / 160
M240	1100 / 1100 (600 GRAZING)
M60	1100 / 1100 (600 GRAZING)
7.62 COAX	900 / 900
M2 .50 CAL	1830 AREA / 1830 1200 POINT / 1200
MK 19	2212 AREA / 2212 1500 POINT / 1500
M202 FLASH	750 AREA / 750 200 POINT / 200

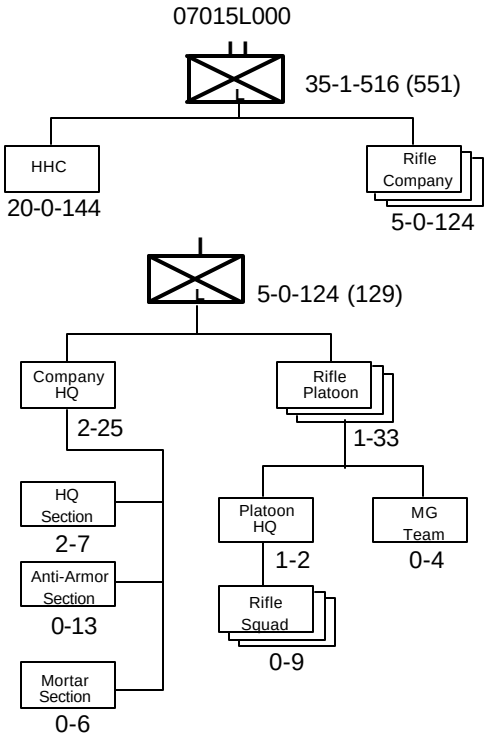
TYPE WEAPON	MAX EFFECTIVE/PLANNING RANGE (meters)
M72A2 LAW	200 STATIONARY / 200 165 MOVING / 165
M136 AT4	300 ALL / 300
M47 DRAGON	1000 / 800 (65 MIN)
JAVELIN	2000 / 2000 (65 MIN)
M242 25MM	3000 HEIT / 3000 2000 APDS-T / 1700
TOW 2	3750 / 2700 (65 MIN)
60 MM MORTAR	3500 HE / 3500 MIN HE 75 (1300 MAX when hand held) 1630 WP / 1630 MIN WP 75 951 ILLUM / 951 MIN ILLUM 100
81 MM MORTAR	5600 HE / 5600MIN HE 73 4800 WP / 4800 MIN WP 73 4500 ILLUM / 5490 MIN ILLUM 400

TYPE WEAPON	MAX EFFECTIVE/PLANNING RANGE (meters)
4.2 IN MORTAR	6840 HE / 6840MIN HE 770 5650 WP / 5650 MIN WP 920 5490 ILLUM / 5490 MIN ILLUM 400
120 MM MORTAR	7200 (HE/WP) / 7200 MIN 200 7400 ILLUM / 7400
M1/M60 105 MM	2800 / 2800
M1A1 120 MM	3000 / 3000

BACK

LIGHT/AIRBORNE/AIR ASSAULT INFANTRY ORGANIZATION

Light Infantry Battalion



LT CO

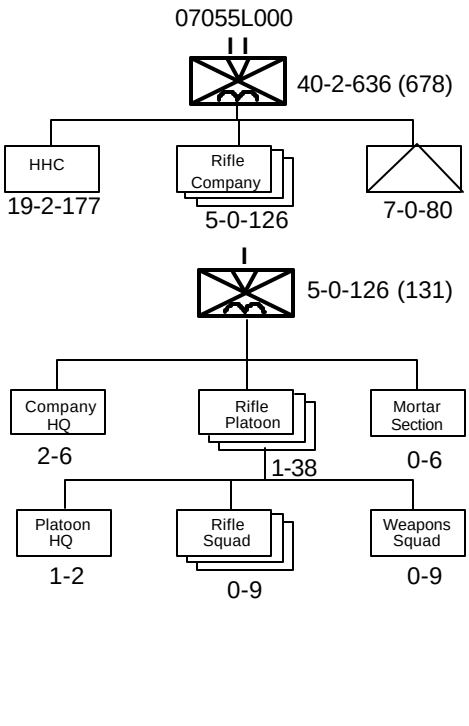
0 VEHICLES

6 AAWS-M
2 60MM MORT
18 LMG (M249)
6 MMG (M240)
19 M203
11 9MM PISTOL
101 M16A2

24 AN/PAQ-4
39 AN/PVS-4
70 AN/PVS-7B
12 AN/PAS-7

8 AN/PRC-119
15 AN/PRC-126

Airborne/Air Assault Battalion



ABN/AASLT CO

0 VEHICLES
6 AAWS-M
2 60MM MORT
18 LMG (M249)
6 MMG (M240)
20 M203
11 9MM PISTOL
103 M16A2

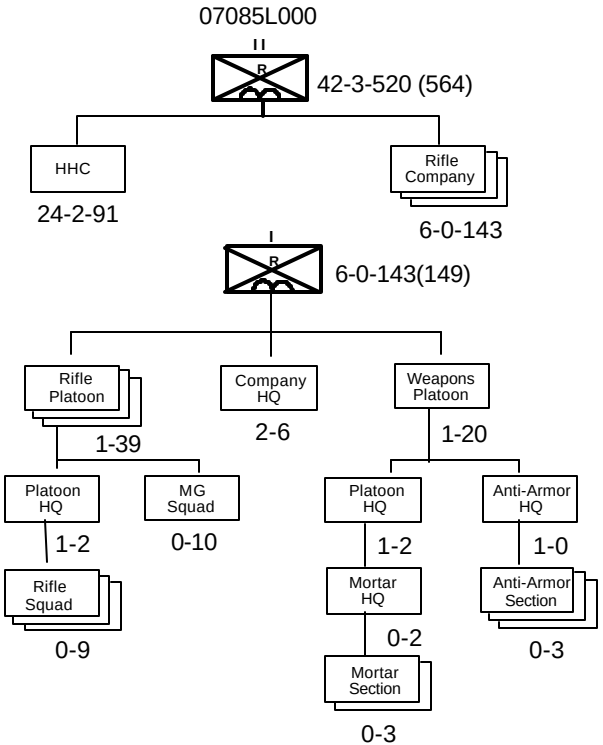
27 AN/PAQ-4
3 AN/PVS-5
33 AN/PVS-4
59 AN/PVS-7B
4 AN/PAS-4

8 AN/PRC-119
15 AN/PRC-126

BACK

RANGER AND MECHANIZED INFANTRY ORGANIZATION

Ranger Battalion



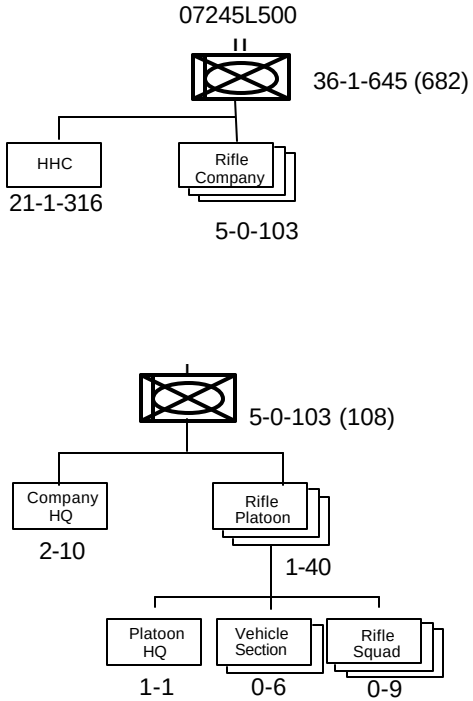
Ranger Company

0 VEHICLES

3 AAWS-M
6 90MM RR
2 STINGER
2 60MM MORT
18 LMG (M249)
9 MMG (M240)
21 M203
17 9MM PISTOL
117 M16A2
8 M24 SNIPER

32 AN.PAQ-4
9 AN/TVS-5
29 AN/PVS-4
84 AN/PVS-7B
3 AN/PAS-7
1 AN/PSC-3
5 AN/PRC-104A
10 AN/PRC-119
16 AN/PRC-126

Mechanized Infantry Battalion (BFV)



BFV Company

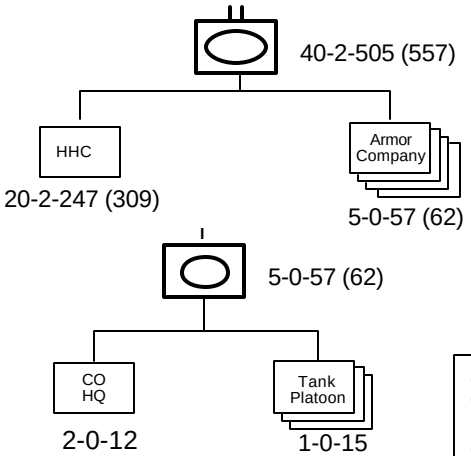
14 M2A2(ODS)
1 M113A3
2 HMMWV
2 LMTV
1 Water Trailer
1 Cargo Trailer

9 AAWS-M
1 CAL.50 M2
1 Mk19 40MM
18 LMG (M249)
18 M203
16 9MM Pistol
65 M16A2
1 M24 Sniper
23 AN/PAQ-4
2 AN/TVS-5
20 AN/PVS-4
65 AN/PVS-7B
3 AN/PAS-7
1 AN/UAS-11
11 AN/PVS-6
6 AN/VRC-87
1 AN/VRC-90
6 AN/VRC-91
3 AN/VRC-92
5 AN/PRC-119
12 AN/PRC-126

BACK

ARMOR BATTALION/COMPANY & HHC ORGANIZATION

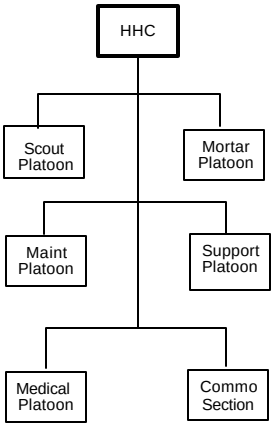
Armor Battalion



Armor Battalion Assets

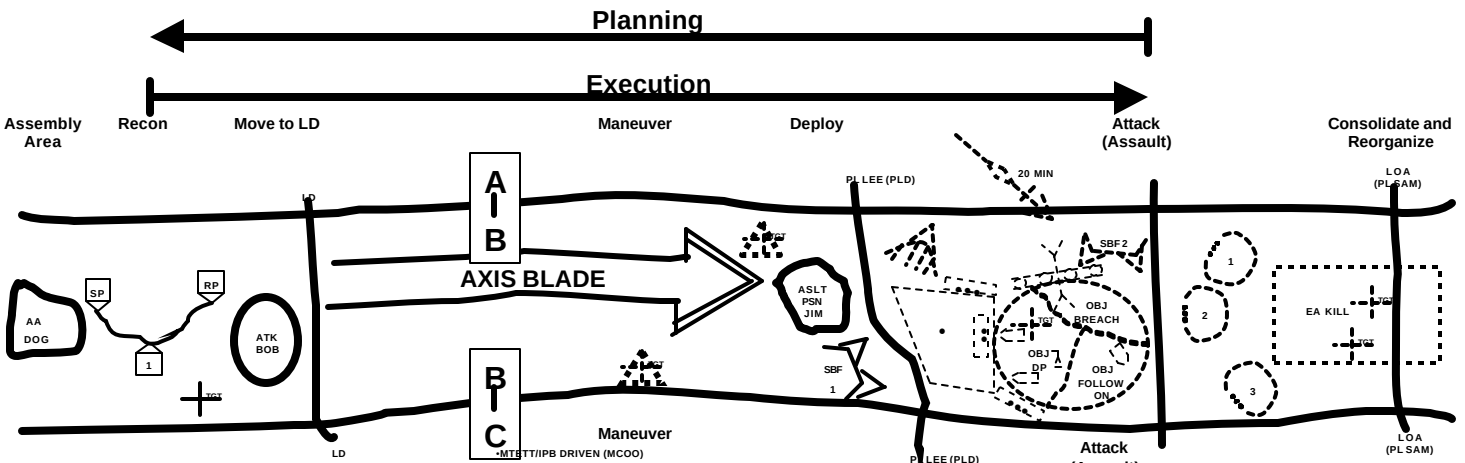
58 M1A1 or M1A2
6 Mortar (120MM)
11 M113
6 M1114 (Up-armored)
15 HEMTT Cargo
16 HEMTT Fueler
8 Tracked Ambulance M113
7 M88 Recovery Vehicles

Key Elements of HHC



BACK

SEQUENCE OF THE ATTACK



Assembly Area

- TROOP LEADING PROCEDURES
  - PATROL
  - PLAN/PREPARE
  - REHEARSALS
  - TIME MANAGEMENT
  - SURVIVABILITY
  - INSPECT
  - RECON TO LD
  - DEPARTURE
  - MOVEMENT
- SECURITY
  - POSITIONING
  - POSTURE
  - FIRE SUPPORT PLAN
- LOAD PLANNING
  - SUSTAINMENT
  - CONTINGENCY
- OVERLAY

Recon

- ASSETS AT COMPANY/BATTALION
- IPB DRIVES...
  - R&S PLAN
  - PRIORITIES
  - SECURITY
  - FIRE SUPPORT PLAN
  - CSS
- REDUNDANCY
- COMMUNICATIONS
- PATROL FOR GAPS?
- GUIDES
- SNIPER EMPLOYMENT

Move to LD

- VEHICLE OR FOOT
- SOLDIERS' LOAD
- COMBAT LOAD
  - APPROACH
  - FIGHTING
- SECURITY FORCE
- ROUTE SELECTION
- MOVEMENT ORDER
  - OOM
  - FORMATION
  - TECHNIQUE
- FIRE SUPPORT PLAN
- PASSAGE OF LINES?

Maneuver

- MTETT/IPB DRIVEN (MCOO)
  - ROUTE SELECTION
  - MULTIPLE/SINGLE ROUTES
  - CENTRALIZED OR DECENTRALIZED MOVEMENT
  - WHO LEADS?
  - FORMATIONS
  - TECHNIQUES
  - ACTIONS ON CONTACT
  - SECURITY ENROUTE
  - FIRE SUPPORT PLAN
  - CONTROL MEASURES
  - DECEPTION TECHNIQES
  - NAVIGATION TECHNIQUES
- SOLDIERS' LOAD (COMBAT LOAD)
  - 81MM/60MM AMMO
- CASEVAC ENROUTE
- LINKUP PLAN
- ORP LOCATION, OCCUPATION, AND ACTIVITIES
- LEADER'S RECONNAISSANCE

Deploy

- ASSAULT POSITION
  - LOCATION
  - ACTIVITY
- PLD
  - LOCATION
  - ACTIVITY
- DEPLOY FROM ASSAULT POSITION OR ORP?

Attack (Assault)

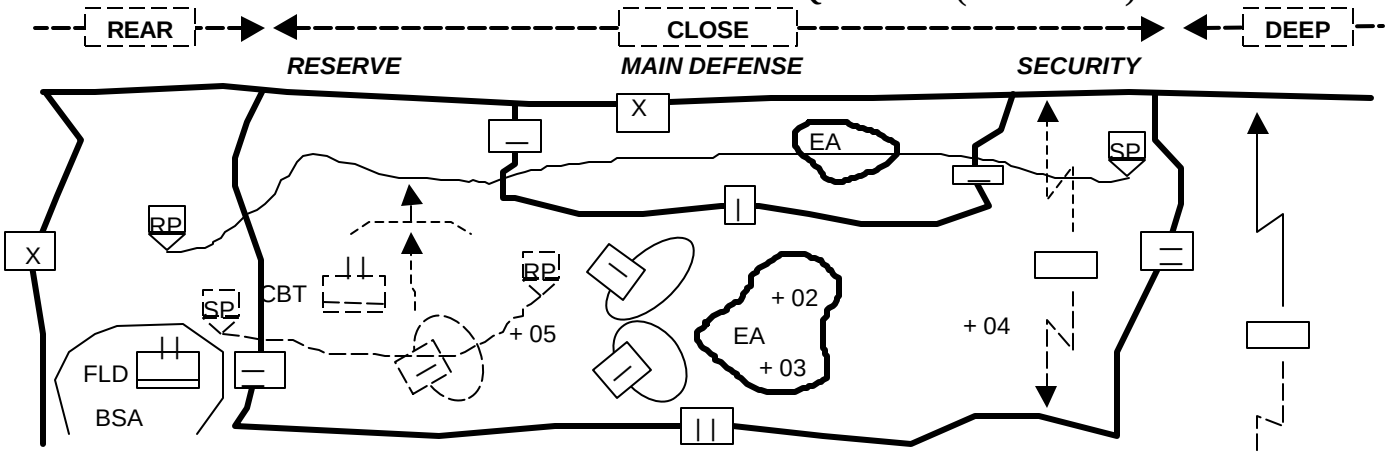
- FOCUS COMBAT POWER AT DP
- 3 STEP PROCESS: ISOLATE (IN/OUT); PENETRATE (FOOTHOLD); EXPLOIT PENETRATION (DP)
- INDIRECT APPROACH
- MASS EFFECTS
  - DIVIDE OBJECTIVE
  - DIRECT FIRE DISTRIBUTION
  - FIRE SUPPORT (FA/MTRS)
  - CONSIDER 60MM IN SBF
  - SBF POSITIONING (CLOSE AND MOVING OR FAR AWAY)
  - FIRE CONTROL (TRPs, EVENTS AND SIGNALS
  - CONTROL MEASURES
  - FRATRICIDE PREVENTION
- CONCENTRATE FORCES
  - ORGANIZATION FOR COMBAT
  - WEIGHT M.E.
  - RESERVE SIZE, PURPOSE, LOCATION
- SYNCHRONIZATION
  - ASSAULT TIMING
  - C2

Consolidate and Reorganize

- EXPLOIT SUCCESSES
- CONSOLIDATE
  - PREPARE FOR CATK
- REORGANIZE
  - RESTORE C2
  - BUILD COMBAT POTENTIAL
- FORCE PROTECTION
  - CSS INTEGRATION
  - POSITION BASED ON MTETT, NOT SOP
  - FIRE SUPPORT PLAN
- CULMINATING POINT REACHED?
- SHIFT M.E. MAY BE NECESSARY
- C&R OVERLAY FOR SIMPLICITY

BACK

DEFENSIVE FRAMEWORK & SEQUENCE (TYPICAL)



Occupation & Reconnaissance

- Movement to Area of Operation
- Assembly Area
- Secure AO / Relief-in-Place
- Reconnaissance
  - Terrain & Enemy Analysis
  - Direct Fire Planning
  - Obstacle Positioning
  - Fire Support Refinement
  - Survivability Prioritizing

Security & Preparation

- Initiate Defensive Preparations
  - TRP Construction
  - Weapons Positioning
  - Fighting Position Construction
  - Obstacle Construction
- Security
  - R&S plan
  - Counter-reconnaissance
  - Local Security
  - Deception
  - Hide Positions
- Complete Defensive Preparations
  - Finalize Engagement Plan
  - Rehearsals
  - CSS Preparations
  - Sustainment
- Tracking Preparation

Execution & Counterattacks

- Battle Hand-Over / Pass-Lines
- Obstacle Closure
- Call/Adjust Indirect Fires
- Protective Obscuration
- Focus, Distribute, shift Fires
- Disengagement
- Reserves/Counterattacks
- Battle Tracking
  - Reporting
  - Intelligence Summaries (INTSUMs)
  - Battle Summaries

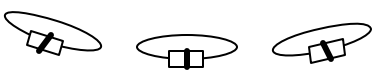
Consolidation & reorganization

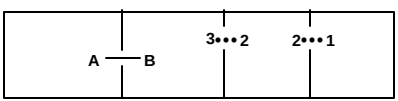
- Repositioning
- Medical Evacuation
- EPW Collection
- Maintenance Recovery
- Obstacle Repair
- Relief-in-Place
- Follow-on Mission

BACK

BATTLE POSITION OR SECTOR?
DEFENSIVE CONSIDERATIONS

BATTLE POSITION	**Indicators**	**SECTOR**
1. Well defined, enemy can be canalized	1. Avenues of Approach	1. Not easily defined
2. Dominates avenues of approach	2. Terrain	2. No dominant terrain
3. Narrow / Small	3. Area of Operations	3. Wide / Large
4. Achievable	4. Mutual Support	4. Not easily achieved
5. Good	5. CDR's Ability to See / Control	5. Degraded
6. Retain / Block	6. Assigned Task	6. Disrupt / Contain





BACK

FIRE CONTROL TECHNIQUES

OFFENSIVE FIRE PLANNING

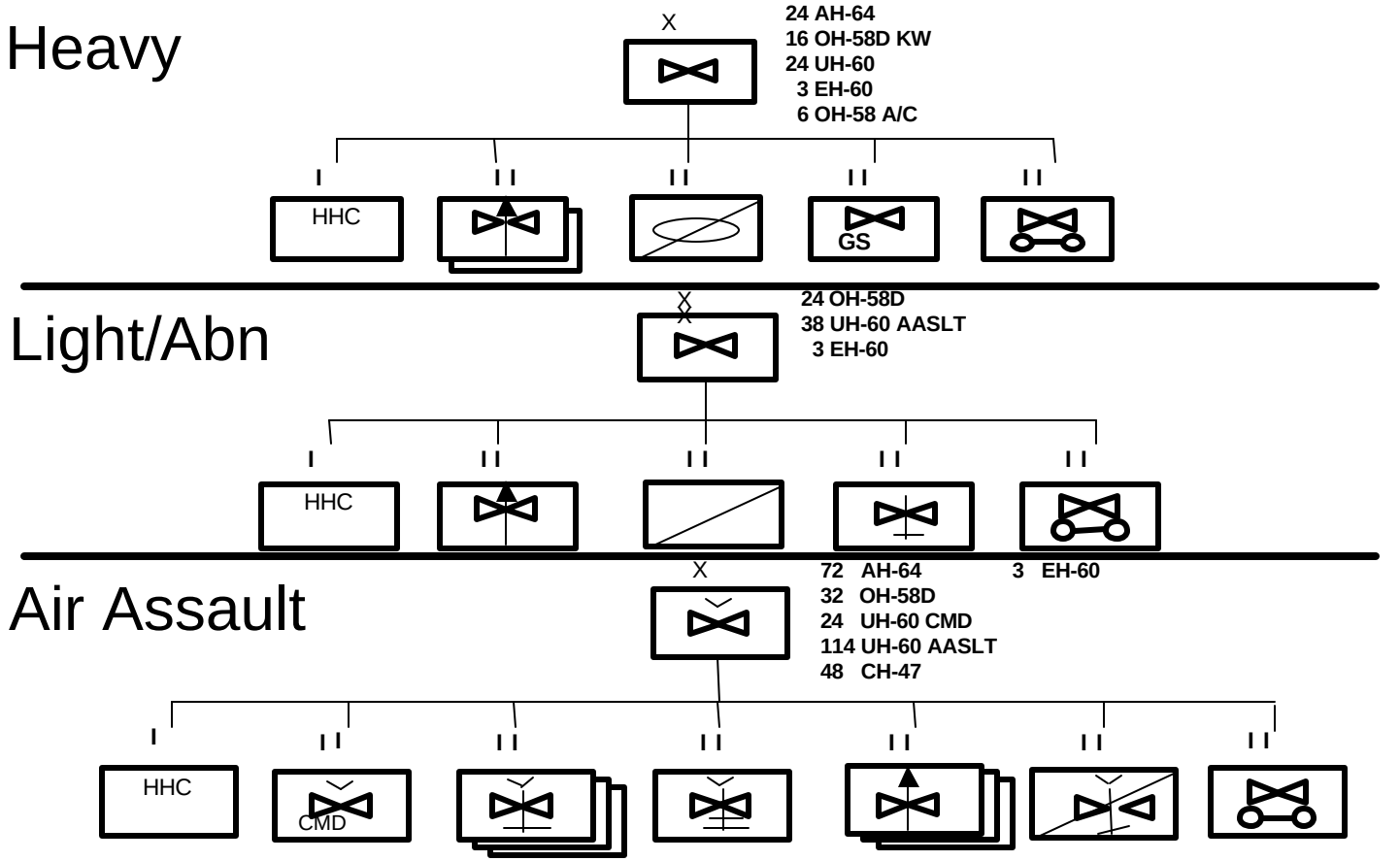
- SECTORS
- QUADRANT TRPs
- POINT TARGET TRPs
- CLOSEST TRP
- FIRE PATTERNS
- MOVING QUADRANTS
- STARBURST

DEFENSIVE FIRE PLANNING

- DIVIDING THE EA
- SECTOR
- CLOSEST TRP
- QUADRANTS
- ENEMY FORMATIONS
- CO/TM PATTERN FIRING
- TARGET ARRAY QUADRANT

BACK

AVIATION BRIGADE ORGANIZATIONS



AVN LNO CAPABILITIES / LIMITATIONS

CAPABILITIES

- Possesses current graphics, unit locations, combat power, logistics status, and commanders intent for Aviation Bde/Avn TF
- Familiar with the capabilities and limitations of each of the aircraft types in the Avn Bde
- Can assist S-3 with wargaming and course of action development
- Can assist S-2 with IPB
- Understands Avn Commanders Critical Information Requirements (CCIR)
- Maintains Commo with Avn unit
- Can assist with A2C2

LIMITATIONS

- Experience - Typically senior LT or junior CPT qualified in only one type aircraft
- CANNOT ALLOCATE AIRCRAFT (this must come from Avn Cdr)
- Will not have an aircraft. May not have a vehicle
- Only one deep. Not available 24 hrs continuously

COMMANDER'S GUIDANCE FOR AVN PLANNING

GENERAL

- Flight time in one duty period restricted to:**
  - 8 hrs day
  - 6 hrs day/night
  - 5 hrs Night systems
- Crew day of 14 hrs on, then 10 hrs off
- Avn Cdr can grant extensions of flt/crew day but do not plan missions that require an extension

DIV CAVALRY

- Give orders as early as possible (R&S Plan)
- Be specific with reconnaissance missions
- Give priority of fire whenever possible

ATTACK

- Don't specify number of aircraft. Give a mission.
- Utilize in SBF and ABF positions
- Identify and brief IFF/Antifrat measures down to lowest soldier

LIFT

- Plan to use extensively - Often underutilized, especially in Hvy Divisions
- Plan to use as CASEVAC on missions with heavy enemy contact
- Sling load 8000 Lbs

C2 / LOG

- C2 Black Hawk flies for 5.5 Hrs with external fuel
- FARPs often require assistance with security

**** Rule of Thumb - may vary slightly in some divisions**

BACK

HELICOPTER CHARACTERISTICS

	AH-1	AH-64	OH-58C	OH-58D	UH-1	UH-60	CH-47D
1. Cruise airspeed (kts)	120	140	100	100	100	140	140
2. Flight time (hr + min) (Less 30 min reserve)	2+00	2+00	2+00	2+00	2+00	2+00	2+00
3. Troop seats	-	-	2	-	7	13	33
4. Cargo Hook Limitations (lbs)	-	-	-	-	4000	8000	28000
5. Weapons							
a. 7.62mm (wpns)	-	-	-	-	2	2	2
b. 20mm (rds)	750	-	-	-	-	-	-
c. 30mm (rds)	-	1200	-	-	-	-	-
d. 2.75" (rds)	76	76	-	-	-	-	-
e. TOW (rds)	8	-	-	-	-	-	-
f. Hellfire (rds)	-	16	-	-	-	-	-
8. Day sight power (max)	x13	x126	-	x126	-	-	-
9. Night sight power (max)	-	x36	-	x36	-	-	-
10. Rotor start/stop wind	40	45	45	45	30	45	30

DATA IS COMPUTED AT STANDARD SEA LEVEL CONDITIONS. ACTUAL DATA WILL VARY WITH DENSITY ALTITUDE, TEMPERATURE, SOP, AND UNIT MISSION.

BACK

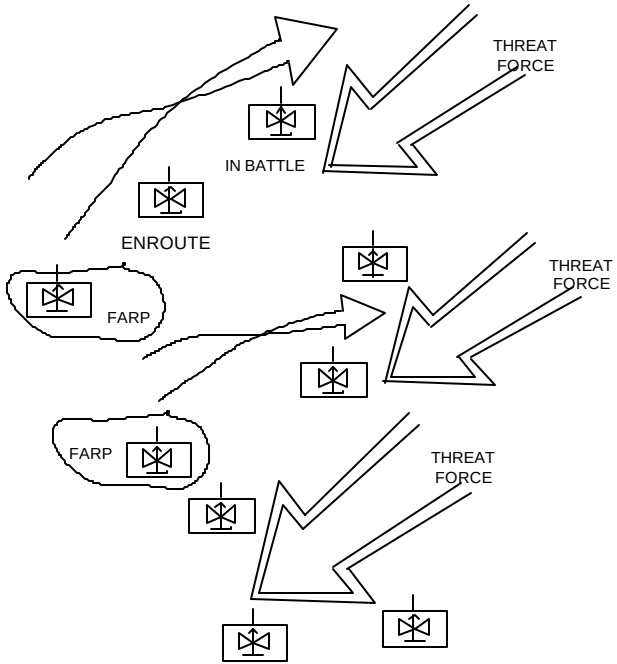
ATTACK HELICOPTER BATTALION OPERATIONS

DESIRED RESULTS	DESCRIPTION	RISK
Attack to Destroy	Use direct and indirect fires to physically render an enemy force combat-ineffective unless reconstituted.	High
Attack to Attrit	Use direct and indirect fires to reduce the effectiveness of an enemy force caused by the loss of personnel and material.	Med-High
Attack to Delay	Use direct and indirect fires to engage the enemy understanding that destruction of the enemy is secondary to slowing his advance.	Med-High
Attack to Disrupt	Use direct and indirect fires to break apart an enemy formation and tempo, interrupt the enemy's time table, cause pre-mature commitment of forces and/or piecemeal his attack	Med-Low

The ATKHB is most effective against massed, moving targets and least effective against enemy forces that are in prepared, well-camouflaged positions. Without the support of ground maneuver forces, the ATKHB can not conduct missions that require the occupation of terrain. However, they can deny the enemy terrain for a limited time by dominating it with direct and indirect fires. Fire support suppresses enemy air defenses, causes armored vehicles to "button up", and multiplies the combat power of the ATKHB.

ATTACK HELICOPTER BN EMPLOYMENT TECHNIQUES

METHOD	ADVANTAGES	DISADVANTAGES
1. Continuous Attack	* Exerts constant pressure on the enemy	* Only one company in contact
	* The most flexible technique	
	* Efficient FARP operation (20/30 minutes/company)	
2. Phased Employment	* Increased pressure on the enemy	* Lengthened FARP times
	* May exert constant pressure on the enemy	* Difficult to maintain for extended periods
3. Maximum Destruction	* Maintain pressure on the enemy	* Does not exert constant pressure on the enemy
	* Massed firepower over a wide area	* FARP time is increased (60-80 minutes/battalion



BACK

WEAPONS CONFIGURATIONS

AH-64

WEAPON	LOAD	MAX RNG
30 mm Chain Gun	1200 RNDS	4000m
2.75” RKTS	19 PER POD (76)	9000m
HELLFIRE	8 PER SIDE (16)	8000m

AH-1

WEAPON	LOAD	MAX RNG
20 mm Cannon	7500 RNDS	2000m
2.75” RKTS	19 PER POD (76)	8000m
TOW	4 PER SIDE (8)	3750m

OH-58D

WEAPON	LOAD	MAX RNG
.50 CAL MG	500 RNDS	2000m
2.75” RKTS	7 PER POD (14)	9000m
HELLFIRE	2 PER SIDE (4)	8000m
STINGER	2 PER SIDE (4)	4000m

ATTACK HELICOPTER WEAPON SYSTEMS DATA

WEAPON	MIN RANGE	MAX EFF RANGE	MAX RANGE	TYPE ROUNDS	BURST RADIUS	POINT/ AREA	TYPE TARGET
AH-1S COBRA							
20MM		2000M	3000M	HEI/API	2M	AREA	TROOPS AND LIGHT SKINNED VEHICLES
TOW	500M	3750M	3750M			POINT	ARMORED VEHICLES
AH-64 APACHE							
30MM		3000M	4000M	HEDP	4M	AREA	TROOPS AND LIGHT SKINNED VEHICLES
HELLFIRE	1000M	5500M	8000M			POINT	ARMORED VEHICLES

2.75 FFAR OPTIONS (BOTH AH-1 & AH-64)

TYPE	MAX EFF RANGE	BURST	FUZE OPTIONS*
10 LB HE	10,600M	10M	P, SQ, D, FP
ILLUM	3500M	1 SQ KM	*SET
WP, HC	3000M		V, SQ
MPSM	10,600M	20M	V

* P=PROXIMITY, D=DELAY, SQ=SUPER QUICK, FP=FOREST PENETRATION, V=VARIABLE

BACK

AIR ASSAULT OPERATIONS

- GROUND TACTICAL PLAN
- LANDING PLAN
  - LOCATION CRITICAL TO GROUND TACTICAL PLAN
  - SEQUENCING OF TROOPS
- AIR MOVEMENT PLAN
  - BASIS OF TIMING (H-HR)
  - AIRSPACE COMMAND AND CONTROL
- LOADING PLAN
  - SELF-SUFFICIENCY OF LOADS
  - TACTICAL INTEGRITY
  - TACTICAL CROSS-LOADING
- STAGING PLAN
  - UNITS P.Z. POSTURE PRIOR TO A/C ARRIVAL
  - AIR MOVEMENT TABLE

BACK

UNIQUE ASPECTS OF AIR ASSAULT OPERATIONS

PLANNING:

- C2 PLANNED ONE LEVEL UP
- TIME
- FIVE PLANNING PHASES (POSSIBLY MORE)
- AIRSPACE MANAGEMENT
- AIR MISSION BRIEF

SUPPRESSION OF ENEMY AIR DEFENSE (SEAD)

COMMUNICATION NETS:

- AIR ASSAULT TASK FORCE COMMAND NET
- COMBAT AVIATION NET
- AIR BATTLE NET
- FIRE SUPPORT NET
- AVIATION INTERNAL NET

BACK

AIR ASSAULT PROBLEMS AND CHALLENGES

SYNCHRONIZATION OF FORCES

A2C2

LIMITED MOBILITY ON GROUND

COMMUNICATIONS

LIMITED COMBAT POWER

WEATHER

AUSTERE CS/CSS

SEAD

AMB (Air Mission Brief)

TRAINING OF SOLDIERS

BACK

CONSOLIDATED OPERATIONAL DEFINITIONS & TASK LIST

Task: A clearly defined, measurable activity accomplished by individuals and organizations. Tasks are specific activities which contribute to the accomplishment of encompassing missions or other requirements. A task should be definable, attainable, and decisive. (FM 25-100)

Operation: A military action, or administrative military mission; the process of carrying on combat, including movement, supply, attack, defense, and maneuvers needed to gain the objectives of any battle or campaign. (FM 101-5-1)

Mission: The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore. In common usage, especially when applied to lower military units, a duty assigned to an individual or unit; a task. It usually contains the elements of who, what (task), when, where, and the reason (purpose), but seldom specifies how. (FM 101-5-1)

Attrition: The reduction in the effectiveness of a force caused by the loss of personnel or materiel (JP 1-02, NATO)

Block: A tactical task assigned to a unit that requires it to deny the enemy access to a given area or prevent enemy advance in a given direction or an avenue of approach. It may be for a specified time. Units may have to retain terrain and accept decisive engagement. (FM 101-5-1) *Comment: a force assigned the task of "block" should normally be assigned the degree of success to be achieved and/or a specified time frame in support of its purpose.*

Breach: A tactical task where any means available are employed to breach through or secure passage through an enemy defense, obstacle, minefield or fortification. (FM 101-5-1)

Canalize: To restrict operations to a narrow zone by use of obstacles, fires or unit maneuvering or positioning. (FM 101-5-1)

Clear: A tactical task to remove all enemy forces and eliminate organized resistance in an assigned zone, area, or location by destroying, capturing, or forcing the withdrawal of enemy forces such that they cannot interfere with the friendly unit's ability to accomplish its mission. (FM 101-5-1) *Comment: the degree of success to be achieved should be specified so as to describe what is meant by "organized resistance". A force may be tasked to clear some or all organized resistance within a certain time frame. A force may also be assigned the task to "clear" a sector, route, lane, or area of operation. A force may also be assigned the task to "clear" an area of mines, obstacles, fortifications, booby-traps, etc.*

BACK

CONSOLIDATED OPERATIONAL DEFINITIONS & TASK LIST

Combat Power: A combination of the effects of maneuver, firepower, protection, and leadership.

Contain: A Tactical task to restrict enemy movement. (FM 101-5-1) To stop, hold, or surround the forces of the enemy or to cause the enemy to center activity on a given front and to prevent his withdrawing any part of his forces for use elsewhere. (JP 1-02, NATO) *Comment: the meaning of "center activity" equates to focusing the majority of the enemy's combat power at a certain location or for a specific time frame.*

Cover: A type of security operation that protects the force from surprise, develops the situation, and gives commanders time and space in which to respond to the enemy's actions. Additionally, a Covering Force is any body or detacment of troops which provides security for a larger force by observation, reconnaissnance, attack, or defense, or by any combination of these methods. (FM 101-5-1) *Comment: a covering force is a tactically self-contained force. It is typically organized with sufficient combat support (CS) and combat service support (CSS) forces to operate independently of the main body.*

Delay (Delaying Operation): A tactical task to trade space for time, inflict maximum damage on the enemy force, and preserve the force within the limits established by the commander. In delay operations, the destruction of the enemy force is secondary to slowing his advance to gain time. (FM 101-5-1)

Destroy: A tactical task to physically render an enemy force combat-ineffective unless it is reconstituted. To render a target so damaged that it cannot function as intended nor be restored to a usable condition without being entirely rebuilt. (FM 101-5-1) *Comment: the degree of "destruction" can be specified to a force assigned this task in relationship to its purpose. A target can be personnel, equipment, material, terrain, or an intangible such as morale or willingness to fight.*

Demonstration: A type of attack that is a deception similar to a feint, with the exception that no contact with the enemy is sought. (FM 101-5-1)

Disrupt: A tactical task or obstacle effect that integrates fire planning and obstacle effort to break apart an enemy's formation and tempo, interrupt the enemy's timetable, or cause premature commitment of enemy forces, or the piecemealing of his attack. (FM 101-5-1) *Comment: a force assigned that task of "disrupt" should normally be assigned the degree of success to be achieved and/or the duration of the "disruption" in relationship to its purpose.*

BACK

CONSOLIDATED OPERATIONAL DEFINITIONS & TASK LIST

Feint: A type of attack used as a deception intended to draw the enemy's attention away from the area of the main attack. This induces the enemy to move his reserves or to shift his fire support in reaction to the feint. Feints must appear real and therefore require some contact with the enemy. (FM 101-5-1) *Comment: A "feint" is usually a limited-objective attack ranging in size from a raid to a supporting attack.*

Fix: A tactical task in which actions are taken to prevent the enemy from moving any part of his forces either from a specific location or for a specific period of time by holding or surround them to prevent their withdrawal for use elsewhere. (FM 101-5-1)

Guard: A form of security operation whose primary task is to protect the main force by fighting to gain time while also observing and reporting information, and to prevent enemy ground observation of and direct fire against the main body by reconnoitering, attacking, defending, and delaying. (FM 101-5-1) *Comment: A "guard force" normally operates within the range of the main body indirect fire weapons.*

Interdict: A tactical task which is oriented on the enemy to prevent, hinder, or delay the use of an area or route by enemy forces. (FM 101-5-1) *Comment: a force assigned the task of "interdict" should normally be assigned the degree of success to be achieved and/or the duration of the "interdiction" in relationship to its purpose.*

Neutralize: To render enemy personnel or material incapable of interfering with a particular operation. (FM 101-5-1) *Comment: a force assigned the task of "neutralize" will normally be assigned a specific time frame or degree of neutralization to be achieved in relationship to its purpose.*

Retain: A tactical task to occupy and hold a terrain feature to ensure it is free of enemy occupation or use. (FM 101-5-1) *Comment: a force assigned the task to "retain" may be required to occupy and hold a terrain feature to ensure it is free of enemy occupation or use for a specified period of time. This task is normally associated with defensive operations.*

BACK

CONSOLIDATED OPERATIONAL DEFINITIONS & TASK LIST

Screen: A task to maintain surveillance; provide early warning to the main body; or impede, destroy, and harass enemy reconnaissance within its capability without becoming decisively engaged. A security element whose primary task is to observe, identify, and report information, and which only fights in self-protection. (FM 101-5-1)

Secure: A tactical task to gain possession of a position or terrain feature, with or without force, and to deploy in a manner which prevents its destruction or loss to enemy action. (FM 101-5-1) *Comment: the attacking force may or may not need to physically occupy the area.*

Seize: A tactical task to clear a designated area and obtain control of it. (FM 101-5-1). *Comment: units assigned the task of "seize" will usually need to gain physical possession of a terrain feature from an enemy force.*

Suppress (suppression): A tactical task to employ direct or indirect fires, electronic attack, or smoke on enemy personnel, weapons, or equipment to prevent or degrade enemy fires and observation on the friendly forces. (FM 101-5-1) *Comment: a force assigned the task of "suppress" will normally be assigned a specific time frame or the desired effects of the "suppression" in relationship to its purpose.*

Note: above list is not all inclusive.

BACK

FIRE SUPPORT

- COMPANY COMMANDER'S RESPONSIBILITY IN TOP DOWN FIRE PLANNING (continued)
- DS FA BATTALION ORGANIZATION
- FIRE SUPPORT SYSTEMS AVAILABLE BY TYPE DIVISION
- INDIRECT FIRE ASSETS - CAPABILITIES
- PLANNING UNIT BASIC LOADS
- FIRE SUPPORT PLANNING PROCESS
- FIRE SUPPORT TARGETING PROCESS
- MISSION ANALYSIS - FIRE SPT ASSETS AVAILABLE
- FIRE SUPPORT
- ESSENTIAL FIRE SUPPORT TASK
- BN/TF FIRE SUPPORT ORDERS BRIEF ESSENTIAL ELEMENT
- BN/TF FIRE SUPPORT ORDERS BRIEF ESSENTIAL ELEMENTS (cont.)
- FSO OPORD/REHEARSAL BRIEF
- FIRE SUPPORT WARNING ORDER
- FIRE SUPPORT RESPONSE TIMES
- FIRE SUPPORT COORDINATION MEASURES
  (ALL GRAPHICS ARE IN BLACK)
- FIRE SUPPORT COORDINATION MEASURES(continued)
  (ALL GRAPHICS ARE IN BLACK)
- FIRE SUPPORT COORDINATION MEASURES (continued)
  (ALL GRAPHICS ARE IN BLACK)
- FIRE SUPPORT EXECUTION MATRIX (SAMPLE)
- FIRE SUPPORT EXECUTION MATRIX (BLANK)
- TARGET LIST WORKSHEET
- TARGET SYNCHRONIZATION MATRIX

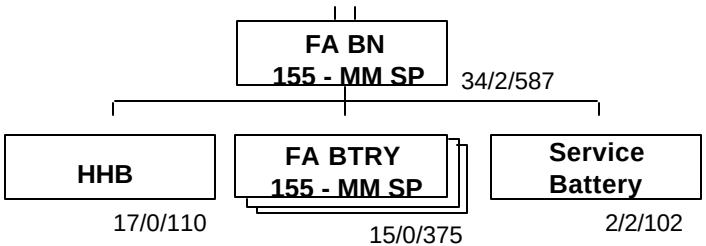
COMPANY COMMANDER'S RESPONSIBILITY IN TOP DOWN FIRE PLANNING (continued)

- *UNDERSTAND HIGHER COMMANDER'S GUIDANCE FOR FIRE SUPPORT*
- *INTEGRATE COMPANY MORTARS (IF AVAILABLE)*
- *CONFIRM/REFINE TARGET LOCATIONS*
- *ESTABLISH/VALIDATE TRIGGER POINTS/LINES FOR ENGAGEMENT*
- *ASSIGN TARGET RESPONSIBILITIES*
- *POSITION FORWARD OBSERVATION ASSETS*
- *CHECK COMMUNICATIONS*
- *REHEARSE FIRE SUPPORT PLAN WITH MANEUVER PLAN*
- *VALIDATE FIRE SUPPORT WARNING ORDER*
- *CHECK TERRAIN SKETCHES*
- *NOMINATE TARGETS IF AUTHORIZED*

BACK

DS FA BATTALION ORGANIZATION

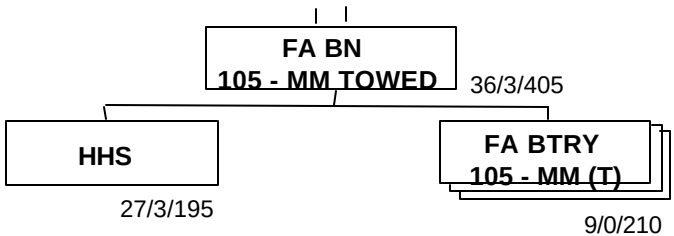
MECH/ARMOR DIVISIONS



MAJOR EQUIPMENT

Howitzer, medium, Self Propelled, 155 mm	18
Carrier, Cargo	18
Carrier, CP	9
FIST-V	12
COLT	6
Q-36	1

LIGHT DIVISIONS



MAJOR EQUIPMENT

Howitzer, medium, Towed, 105 mm	18
HMMWVs	18
Q-36 Counter Battery Radar	1

BACK

FIRE SUPPORT SYSTEMS AVAILABLE BY TYPE DIVISION

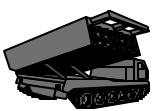
Light Infantry Division

105mm Towed Artillery(DS)	MTRs
 x 18 per DS Bn per BDE (6 per battery)	60mm 2 x CO 8 x Bn
155mm Towed Artillery(GS)	81mm 4 at Bn
 x 6 (one battery) General Support to Div	

Airborne / Air Assault Division

105mm Towed Artillery(DS)	MTRs
 x 18 per DS Bn per BDE (6 per battery)	60mm 2 x CO 8 x Bn
(GS)	81mm 4 at Bn
No General Support Artillery to the Division	

Mech / Armor Division

155mm SP Artillery(DS)	MTRs
 x 18 per DS Bn per BDE (6 per battery)	None at CO
MLRS (GS)	120mm 4 at Bn
 x 6 (one battery) x 18 General Support to Div	

INDIRECT FIRE ASSETS - CAPABILITIES

MORTAR CAPABILITIES

PROJECTILE	60MM	81MM	120MM
HE min	3490	5608	7200
max	70	83	200
ILLUM	3490	5100	7100
WP	3490	4500	7200
RP	N/A	4875	N/A
GAS	N/A	N/A	N/A
CS	N/A	N/A	N/A

RATES OF FIRE

60MM --	MAX:	30 RNDS PER MIN
	SUST:	20 RNDS PER MIN UNLIMITED
81MM --	MAX:	30 RNDS PER MIN
	SUST:	15 RNDS PER MIN UNLIMITED
120MM --	MAX:	16 RNDS PER MIN FOR 1 MIN
	SUST:	4 RNDS PER MIN UNLIMITED

FPF SIZES

WEAPON SYSTEM	# OF TUBES	FPF SIZE
60MM	2	60 X 30
81MM	4	140 X 35
107MM	6	240 X 40
120MM	6	420 X 70
105MM	6	210 X 35
155MM	8	400 X 50

HOWITZER CAPABILITIES
LIGHT INFANTRY: M119

PROJECTILE	M119A1
APERS*	DIRECT FIRE ONLY
HEP-T**	DIRECT FIRE ONLY
HE	14.3KM
APICM	11.5KM
HE-RAP	19.1KM
HC SMOKE	11.5KM
WP	11.5KM
ILLUMINATION	11.5KM

*FLECHETTE RD; LIMITED SUPPLY
**LIMITED SUPPLY; USED AGAINST LIGHT ARMORED VEHICLES AND BUNKERS

MAX/SUS RATE OF FIRE -- M119A1

6 RNDS/MIN FOR 2 MIN THEN 3 RNDS/MIN
FOR 30 MIN THEN 1 RND/MIN

HOWITZER CAPABILITIES
M109A6 (PALADIN)

PROJECTILE	CHG8	CHG7W	MAX RATE	SUST RATE
HE	18.1KM	14.7KM	4RDS/MIN FOR 3 MIN	1 RND/MIN FOR 60 MIN THEN .5 RDS/MIN
BB-DPICM	**27.7**	**17.0**		
DPICM*	17.8	14.4		
M825 SMOKE	21.7	14.3		
COPPERHEAD***	16.0	11.0		
ADAM/RAAM**	17.7	14.6		
ILLUMINATION	17.5	14.2		
HE-RAP	**30.0**	23.4		

*CONTAINS 88 SUBMUNITIONS. EACH WILL PENETRATE 2.75" OF ARMOR AND WILL PROCUCE ANTI-PERSONNEL FRAGMENTATION.

**FASCAM
***FOOT PRINT CONSIDERATIONS:
ANGLE "T" LESS THAN 800 MILS (45 DEGREES)
DISTANCE FROM LASER TO TARGET:
MOVING -- 3 KM
STATIONARY - 5KM
DISTANCE FROM HOWITZER TO TARGET: 16 KM

BACK

PLANNING UNIT BASIC LOADS

	60mm Mortar		81mm Mortar		107mm Mortar		120mm Mortar*	
HE	312		288		460		290	
WP	96		36		160		124	
ILLUM	72		84		72		----	

*PLT has HEMMIT to carry additional 110 rds (70%HE / 30%WP)

105mm Artillery

HE	216
WP	96
ILLUM	72
HC	36
HEP-T	18
APICM	60
HE-RAP	342
APERS	18

155mm Artillery

HE	384
WP	96
ILLUM	96
DPICM	2400
HE-RAP	792
SMK	96
ADAM	456
RAAM	480
CPHD	72

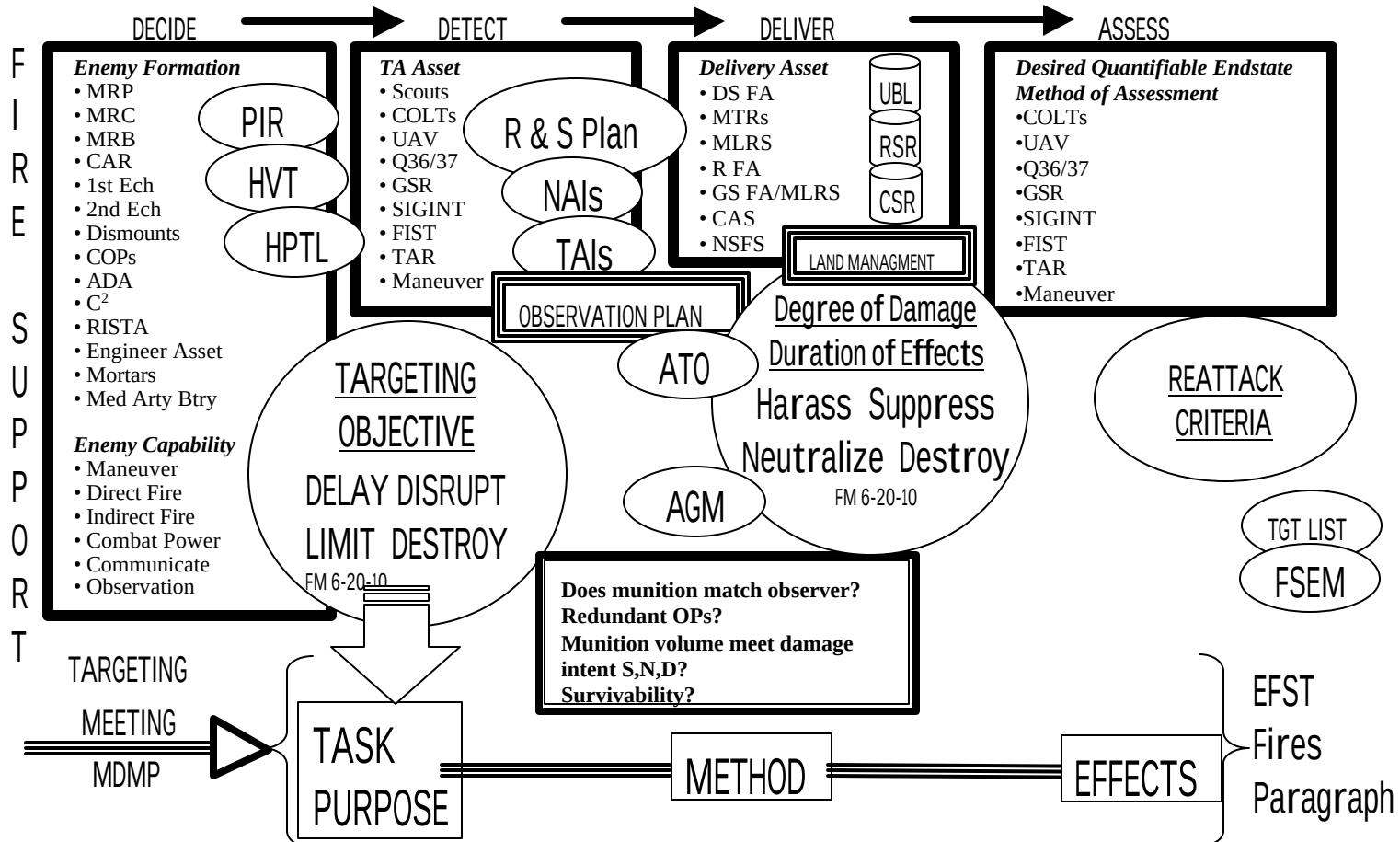
Bn (1) = 18 rds
Bn (3) = 54 rds
Bn (9) = 162 rds

Computing Killer Missions:
DPICM
54 rds destroys 1 Tank
54 rds = Bn (3) DPICM
Bn (3) x 3(vehicles in MRP) = Bn (9)
Bn (9) takes 10 minutes to shoot
plus transmission time + 3 minutes
plus Time of Flight + 36-50 seconds
Total mission time approx 14-15 minutes

FIRE SUPPORT PLANNING PROCESS

MDMP STEP	INPUTS	ACTIONS	OUTPUTS
RECEIPT OF MISSION MISSION ANALYSIS	• Higher WARNO or OPORD • Facts from FA Bn, ALO, Others • Facts from higher, lower, and adjacent FSE's / FIST • IPB Products • Enemy COA from S-2 • HVTs by enemy phase or critical event	• Understand Higher Mnvr and FS Plan • Organize and Analyze facts • ID Specified and Implied Tasks • Translate Status of FS Assets into capabilities • Analyze effects of IPB on FS • Use above to develop draft EFSTs	• FSO protion of MA Brief Higher FS Plan Briefing Charts FS Status FS Capabilities/Limitations FS IPB Analysis FS Timeline • Recommend EFSTs • Commander Approves/ Modifies EFSTs and gives further FS Guidance
COA DEVELOPMENT	See OUTPUTs from Step 1	• Determine where to find and attack EFST formations • ID HPTs in those formations • Quantify the effects for EFSTs • Plan "Method" for EFSTs Allocate TA Assets / Deliver Assets Integrate Triggers with Mnvr COA • Use Battlefield Calulus • Assist S-2 in R&S Development to support FS	• For each COA developed: Concept of Fires Draft FSEM Draft TGT List / Overlay Draft TSM or modified TSM Collection / R&S Plan
COA ANALYSIS AND COA COMPARISON	See OUTPUTs from Step 2	• Targeting Decisions : Finalize HPTL • Wargame FS Plan(s) VS enemy COAs • Modify / Refine Inputs as required • Refine and test FS plan	Final Drafts: • Fires paragraph • FS Annex FSEM TGT List/Overlay TSM (HPTL,AGM,TSS)
COA APPROVAL AND ORDERS PRODUCTION STAFF SUPERVISION	See OUTPUTs from Step 3	Approval briefing FS Plan briefed as part of each COA FSO presents analysis as part of battle staff	Commander: Selects, Approves, Modifies COA FSO: FS WARNO 3 Clean-up finalize & reproduce written products Prepare, rehearse, and issue OPORD FS Back brief Manage refinement FS Rehearsal

FIRE SUPPORT TARGETING PROCESS



Appendix___ to Annex D to OPORD_____

MISSION ANALYSIS - FIRE SPT ASSETS AVAILABLE

FIELD ARTILLERY

Tactical Mission	Unit	Model	# of tubes	Location	AVAILABILITY Event	Event	Event	Event
DS								
R								
GS								
O-36								

FA CAPABILITIES

KILLER MISSIONS		# RDS PER TUBE
DPICM	_____ x MRC Bn	27
	_____ x MRP Bn	9
CPHD	_____ x MSNs	2
HE (S)	_____ x MSNs Bn	1
HE (D)	_____ x MSNs Bn	3

SMOKE

___x 1000m x 30min

ILLUM

_____ MIN

FASCAM:

400x400

LOW 24/3 x____

MED 48/6 x____

HI 96/12 x____

SD LD

COLTs x _____

TACP x _____

ETAC x _____

CAS

TYPE	# SORTIES	PUSH	STRIP

NSFS

TYPE	SALT

MTRs

TYPE	#	HE	WP	ILLUM

RESTRICTIONS:

RFIs

RESULTS OF FIRE SUPPORT MISSION ANALYSIS

- **Fire Support Assets Available** (Include DS/R/GSR FA, CAS, Mortars, IEW, COLT, etc.)
- **Fire Support Capabilities** (Number of Killer Missions*, Minutes of Smoke*, Number of FA Delivered FASCAM*)
- **Availability of Fire Support Assets**
- **Fire Support IPB** (Effects of Terrain and Weather on Fire Support Systems and Employment)
  - Friendly
  - Enemy
- **Established Fire Support Coordination Measures**
- **Recommended Fire Support Coordination Measures**
- **HPTs From Higher**
- **Higher Commanders Attack Guidance and Attack Criteria**
- **Specified Fire Support Task From Higher**
- **Implied Fire Support Tasks Form Higher**
- **Recommended High Payoff Targets (HPTs)**
- **Proposed Essential Fire Support Tasks (EFSTs)**
- **Fire Support Timeline**

***Parameters Determined By Unit SOP**

COMMANDERS GUIDANCE FOR FIRE SUPPORT

- **BLUF: Tell the FSO What You Want Fire Support To Do And What Your Priority Is**
- **Prioritized High Payoff Targets**
- **Approved or Modified EFSTs in Logical Sequence***
  - **Task** (Objective, Formation, Function)
  - **Purpose** (Tied To Maneuver Purpose)
  - **Method**
    - **Priority of Fires**
    - **Allocation of Priority Targets**
    - **Employment of Special Munitions** (Changes to SOP)
    - **Allocation of Targets**
    - **Allocation of COLTs/Strikers**
    - **Restrictions and Fire Support Coordination Measures**
- **Effects** (Quantify Desired Results)
- **Positioning Considerations for Fire Support Assets**
- **Class V Planning Considerations**

BDE Specific

- **Counterfire and Use of Radars** (Priorities,Allocation and Placement of Radar Zones)
- **Cueing Schedules**

*** Sub-Bullets Are Possible Format For INFO, Not Required Of Maneuver Commander - But Helpful to FSO**

BACK

ESSENTIAL FIRE SUPPORT TASK

- Prioritized list of things fire support must accomplish
- A task for fire support to accomplish that is required to support a combined arms operation.
- Failure to achieve an EFST may require the commander to alter his tactical or operational plan
- Expressed in terms of task, purpose, method, effects

"**T-P-M-E**"

- **TASK** - Describes Targeting Objectives (delay, disrupt, limit, destroy)
- **PURPOSE** - Describes why the task contributes maneuver
- **METHOD** - Describes how the task will be accomplished (Priority, allocation, restriction)
- **EFFECTS** - Quantify successful accomplishment of the task

BACK

BN/TF FIRE SUPPORT ORDERS BRIEF ESSENTIAL ELEMENT

- UNDERSTAND AND ARTICULATE CDR'S GUIDANCE FOR EACH FS ASSET (PRIORITY OF THE TYPES OF TARGETS AND GUIDANCE AS TO THE EFFECTS DESIRED/REQUIRED)
- PROVIDE PURPOSE, PRIORITY, ALLOCATION, AND RESTRICTION OF ASSETS AVAILABLE (FIELD ARTILLERY, MORTARS AND NGF, CAS IF AVAILABLE)
- HIGH PAYOFF TGTS/ATTACK GUIDANCE MATRIX
- COLT EMPLOYMENT, POSITIONING,TARGET PRIORITIES, AND SECURITY
- CO/TM RESPONSIBILITIES FOR TARGETS/TARGET EXECUTION (PRIMARY AND BACK-UP RESPONSIBILITIES)--**OBSERVATION PLAN**
- CLEARANCE OF FIRES (POSITIVE CONTROL)
- COORDINATING INSTRUCTIONS (TARGET REFINEMENTS, PLANNING CUT-OFF TIMES, ORGANIZATION OF FIST TEAMS IF NON-STANDARD)
- SEAD PLAN
- FIRE SUPPORT COORDINATION MEASURES (INCLUDE ON-ORDER MEASURES)
- AMMUNITION FIRING RESTRICTIONS (USE OF ILLUMINATION, SMOKE, DPICM, OR AMOUNT OF AMMO TO BE FIRED/SAVED)
- CRITICAL COMMO CALL SIGNS AND FREQUENCIES NOT INCLUDED IN SOI (CO AND BN EXTRACTS)
- REHEARSAL INSTRUCTIONS

BACK

BN/TF FIRE SUPPORT ORDERS BRIEF ESSENTIAL ELEMENTS (cont.)

ESSENTIAL ELEMENTS FOR ARTILLERY:

- FA MISSION STATEMENT (TASK AND PURPOSE)
- ORGANIZATION FOR COMBAT (DS, R, GSR FA UNITS AVAILABLE)
- FA LOCATIONS (CURRENT AND PROPOSED)
- FA RANGES (DEPICTED AS RANGE FANS AND BASED UPON PREVAILING PROPELLENT CHG)
- FA AMMO STATUS (EXPRESSED IN BN VOLLEYS FOR HE/ICM, NUMBER OF FASCAM MINEFIELD, NUMBER OF CPHD, MINUTES OF SMOKE AND ILLUM)
- FA PRIORITY OF FIRES & ALLOCATION OF FA TGTS TO PLAN (PRIORITY TGTS, FPFs, PREPLANNED)

ESSENTIAL ELEMENTS FOR MORTARS:

- MORTAR MISSION STATEMENT--PURPOSE AND PRIORITY OF FIRES
- MORTAR TUBES AND AMMO AVAILABLE
- MORTAR MOVEMENT/ OCCUPATION (PLT, SEC, ETC)
- MORTAR POSITIONS AND RANGE FANS
- MORTAR AMMO PRE-POSITIONING/RESUPPLY PLAN
- MORTAR AMMO STATUS (EXPRESSED IN NUMBER OF VOLLEYS FOR HE, NUMBER OF MINUTES OF WP AND ILLUM)
- ALLOCATION OF MORTAR TGTS TO PLAN (FPF, PRIORTIY TGTs, PREPLANNED)

BACK

FSO OPORD/REHEARSAL BRIEF

- COMMANDER'S GUIDANCE
- ACTIONS TO OCCUR
- ATTACK GUIDANCE
- ASSETS AVAILABLE
- PRIORITIES OF FIRE
- ALLOCATIONS
- PRIMARY/ALTERNATE TARGET RESPONSIBILITIES
- OBSERVATION PLAN
- RADAR PLAN
- POSSIBLE REACTIONS TO ENEMY INITIATIVES
- CONTROL MEASURES
- SIGNIFICANT EVENTS THAT ARE TO OCCUR IN RELATION TO TIME OR PHASES OF AN OPERATION

FIRE SUPPORT EXECUTION MATRIX

- ASSIGNS SPECIFIC FS RESPONSIBILITIES TO CO/TM CDR'S.
- GRAPHICALLY DISPLAYS HOW THE FIRE SUPPORT PLAN SUPPORTS MANEUVER PLAN--SYNCHRONIZIES FIRE SUPPORT WITH MANEUVER.
- IDENTIFIES WHO HAS BEEN ALLOCATED PRIORITY OF FIRES, PRIORITY TARGETS (AND WHEN THEY HAVE BOTH), AND FIRE SUPPORT COORDINATION MEASURES.
- ASSIGNS TARGET EXECUTION RESPONSIBILITY -- OBSERVATION PLAN
- WHEN APPROVED, THE FSEM BECOMES THE PRIMARY EXECUTION TOOL

BACK

FIRE SUPPORT WARNING ORDER

- ❑MISSION DTG
- ❑MISSION
- ❑SECTOR/BATTLE POSITION/OBJECTIVE
- ❑TASK ORGANIZATION WITH EFFECTIVE DTG
- ❑TENTATIVE TIME SCHEDULE FOR MAJOR EVENTS (FS/MNVR)
- ❑HIGHER HQ’s PLANNED TARGETS

BACK

FIRE SUPPORT RESPONSE TIMES

DIRECT SUPPORT BATTALION MISSION PROCESSING TIMES

1ST VOLLEY 2-3 MIN
BATTERY 6 RDS = 36 RDS TOTAL = 2 MIN
BATTALION 2 RDS = 36 RDS TOTAL = 4-6 MIN
(DOES NOT INCLUDE CLEARANCE OF FIRES/FA TIME/TIME OF FLIGHT)

DIRECT SUPPORT BATTALION DISPLACEMENT TIMES

MARCH ORDER = 5 MIN
ROAD MARCH = 30 MIN (10KM - 20KM/HR)
ACHIEVE FIRING CAPABILITY = 15 MIN
TOTAL TIME = 45 MIN (WELL TRAINED UNIT)

FASCAM

FASCAM (400M X 400M)

	PLANNED	REHEARSHED
BATTERY	40-45 MIN	20-25 MIN
BATTALION	20-25 MIN	10-15 MIN

SMOKE (1000M FOR 10 MIN)

ADJUSTMENT 5:30 - 11:30
BUILD- UP TIME :30 - 1:30
2 PLTS TO BUILD
1 PLT TO SUSTAIN
TIME BEFORE SCREEN EFFECTIVE 6:00 - 13:00

BACK

FIRE SUPPORT COORDINATION MEASURES

(ALL GRAPHICS ARE IN BLACK)

BOUNDARIES

BOTH PERMISSIVE (ENGAGE TGTS W/I BOUNDARIES) & RESTRICTIVE (CAN'T ENGAGE TGTS ACROSS)

PERMISSIVE MEASURES

FIRE SPT COORD LINE:

CORPS OR DIV LINE BEYOND WHICH ALL FIRES MAY BE FIRED WITH COORDINATION. FAILURE TO COORDINATE DOES NOT PRECLUDE ENGAGEMENT.

FSCL 2nd CORPS
EFF 010530 Z JUN 94

COORDINATED FIRE LINE:

DIV OR BDE LINE BEYOND WHICH SURFACE TO SURFACE FIRES MAY BE FIRED W/O COORDINATION

CFL 9TH IN RGT
EFF 301245AUG64

FREE FIRE AREA:

CORPS OR DIV AREA WHERE ALL FIRES MAY BE DELIVERED W/O COORDINATION

FFA
7TH ID
EFF 110001FEB94-
130001FEB94

BACK

FIRE SUPPORT COORDINATION MEASURES(continued)

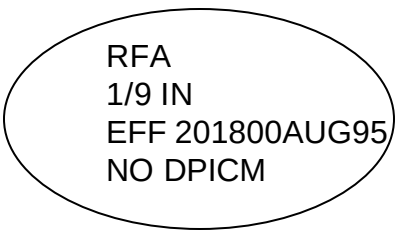
(ALL GRAPHICS ARE IN BLACK)

RESTRICTIVE MEASURES

RESTRICTIVE FIRE LINE:
BN OR HIGHER. LINE BETWEEN TWO CONVERGING FORCES ACROSS WHICH NO FIRES (DIRECT/INDIRECT) OR THEIR EFFECTS MAY CROSS W/O COORDINATION W/ ESTABLISHING HQs

RFL 2/9 IN
151200DEC 96

RESTRICTIVE FIRE AREA:
BN OR HIGHER. AREA INTO WHICH SPECIFIC CONSTRAINTS ON FIRES CANNOT BE EXCEEDED W/O COORDINATION W/ ESTABLISHING HQs



NO FIRE AREA:
DIV OR HIGHER. AREA INTO WHICH NO FIRES OR THEIR EFFECTS MAY BE DELIVERED W/O COORDINATION W/ ESTABLISHING HQs

BACK

FIRE SUPPORT COORDINATION MEASURES (continued)

(ALL GRAPHICS ARE IN BLACK)

RESTRICTIVE MEASURES (continued)

AIRSPACE COORDINATION AREA:

FORMAL -- ESTABLISHED BY BDE OR HIGHER

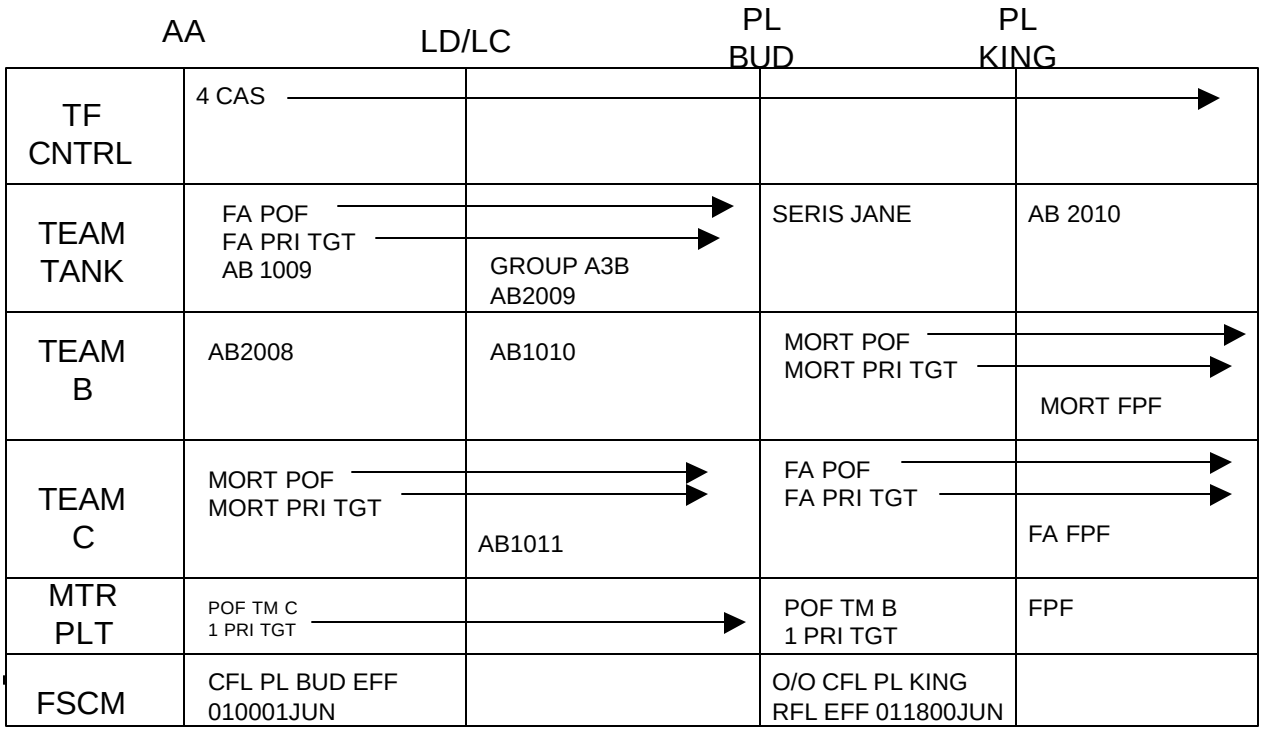
. THREE DIMENSIONAL BLOCK OF AIRSPACE THAT PROVIDES LATERAL AND ALTITUDE SEPARATION BETWEEN AIRCRAFT AND OTHER FIRE SUPPORT ASSETS.

ACA
4 MECH DIV
MIN ALT: 400
MAX ALT: 2700
EFF 080600-080610 JUL94

INFORMAL -- PREFERRED METHOD. ESTABLISHED USING LATERAL, ALTITUDE, OR TIME SEPARATION OR ANY COMBINATION. NORMALLY NOT DEPICTED ON A MAP OR OVERLAY

BACK

FIRE SUPPORT EXECUTION MATRIX (SAMPLE)



BACK

FIRE SUPPORT EXECUTION MATRIX (BLANK)

TF CNTRL													
A CO													
B CO													
C CO													
MTR PLT													
FSCM													

BACK

Appendix___ to Annex D to
OPORD_____

TARGET LIST WORKSHEET

DTG

Line No	a TGT Number	b Description	c Location	d Alt	e Attitude L W	f Purpose	g Primary Observer Alternate	h Trigger	i Net

TARGET SYNCHRONIZATION MATRIX

ASSET STRENGTH UNIT LOCATION	EVENT	EVENT	EVENT	EVENT	EVENT
	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:
	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:
	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:	Enemy Formation HVT/HPTs: Munition: Volume: Trigger: Effects:

NOTE: ASSETS INCLUDE DS FA BN, R FA BN, GSR FA BN, GSR MLRS BN, CAS, AND NSFS

AIR DEFENSE

- MISSION ANALYSIS STEPS AND CDRs GUIDANCE
- TASK ORGANIZATIONS
- ADA PLANNING
- ADA IPB
- ADA EMPLOYMENT
- ADA OPERATIONS
- COMBINED ARMS FOR AIR DEFENSE
- FAADC3I CAPABILITIES
- ADA SYSTEM CAPABILITIES
- FIXED WING THREAT AIRCRAFT
- ROTARY WING THREAT AIRCRAFT

RESULTS OF AIR DEFENSE MISSION ANALYSIS

- **Air Defense Assets Available** (Include DS/GS/R assets and incidental Patriot or other HIMAD coverage, Radar Support)
  - Additional security requirements for ADA assets
- **Air Defense Capabilities** (Night Capable Assets,
  Radar Coverage, FAADC3I capability)
- **Aerial Dimension of the IPB**
  - Enemy Air Avenues of Approach
  - Night Capable/All Weather Systems
  - Airborne or Air Assault Capabilities
  - Potential DZs, LZs, and PZs
  - What is the enemy air targeting?
  - Does the enemy have UAV's, Cruise Missiles, or Ballistic Missiles?
  - Template Enemy ADA systems
  - Type, number of Enemy Sorties by Phase
- **Dissemination Plan for Early Warning , Air Defense Warning/Weapons Control Status and A2C2 integration** (e.g. How will the Task Force Know its Red/Tight or updated Enemy Air activity?)
- **Recommended Command and Support Relationships** (Don't accept "Two stinger teams are **"with"** A Company, must be DS, Attached etc.)

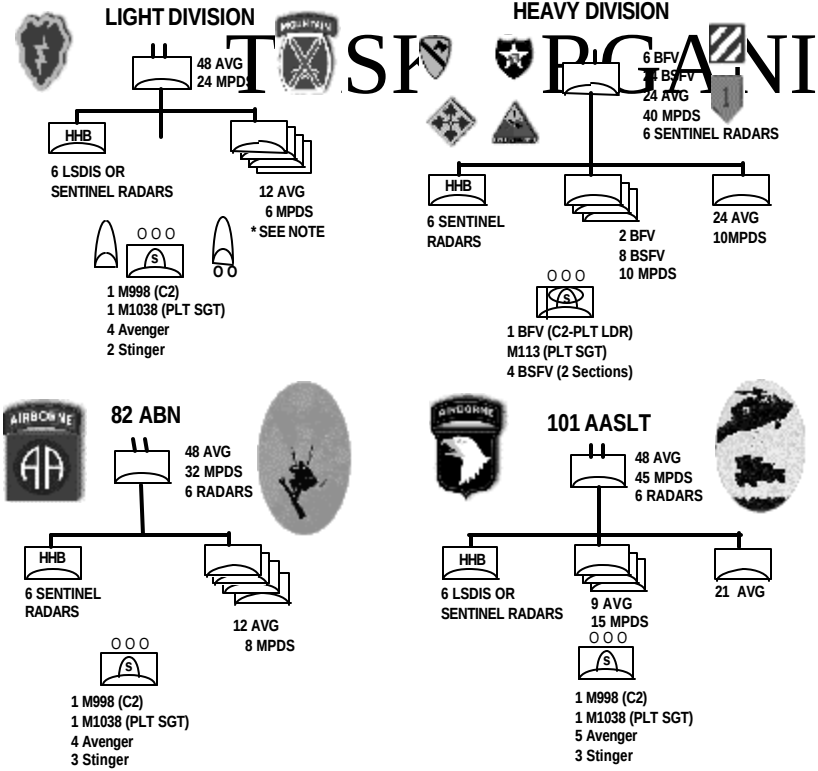
COMMANDERS GUIDANCE FOR AIR DEFENSE

- **BLUF: What do you want ADA to do and where are you willing to accept risk.**
- **Identify specific ADA priorities by critical asset or phase** (A thorough IPB will identify these requirements)
  - Critical Assets: C2, ARTY, CSS, Main Effort, Choke Points, Aviation, FAARP, etc.
  - **Key Events by Phase: Main Avenue of Approach, Security Zone, LZs, DZs, MSRs, Bridges, ADA Ambush etc.**
- **A method for determining risk is CVRT**
  - **Criticality (How critical is the asset to mission accomplishment)**
  - **Vulnerability(How vulnerable is the asset to air attack)**
  - **Recuperability(If lost how difficult is it to recuperate the asset)**
  - ***Threat - Is enemy air targeting the asset**

***Most important- If there is no air threat to an asset then there is no need for ADA. Prioritize scarce ADA assets where they best support the maneuver plan.**

BACK

TASK ORGANIZATION OF DIVISIONAL AIR DEFENSE



2 Sentinel Radars are normally task organized with batteries supporting a maneuver BDE.

General Support assets like the Avenger Batteries in Heavy Divisions may be task organized with maneuver BDEs

*****The 10th Mountain Division has Only 3 ADA Batteries, the 25th Has 4.

AIR DEFENSE PLANNING

CONDUCT IPB ON THE AERIAL THREAT.(CHECKLIST)
ASSIST S-2 TEMPLATING OPPOSING FORCE AIR DEFENSE ASSETS.

ADA PLANNING

MISSION ANALYSIS

1. DETERMINE ASSETS AVAILABLE TO INCLUDE COLLATERAL COVERAGE FROM EXTERNAL ASSETS (PATRIOT, AEGIS ETC.)
2. IDENTIFY THE COMMAND OR SUPPORT RELATIONSHIP OF THE AIR DEFENSE ASSETS
3. IDETERMINE ADJACENT UNIT ASSETS
4. IDENTIFY SPECIFIED TASKS. IF NOT OUTLINED IN TASKS TO SUBORDINATE UNITS

SEE ESSENTIAL TASKS, STEP 7.

5. IDENTIFY IMPLIED TASKS. ALWAYS REMEMBER EARLY WARNING.
6. IDENTIFY LIMITATIONS.
   - A. DO YOU HAVE ENOUGH AVENGERS FOR A THOROUGH NIIGHT DEFENSE?
   - B. IS THERE AN EXTERNAL RADAR SOURCE (PATRIOT, AWACS) TO GIVE EXTENDED EARLY WARNING AND SCUD ALERTS?
   - C. IF AN AIR ASSAULT IS BEING PLANNED ARE THERE CH-47s AVAILABLE FOR THE AVENGERS?
   - D. IS THERE AN ADEQUATE RESUPPLY RATE OF STINGER MISSILES?
   - E. IDENTIFY THE AIR DEFENSE WARNING/WEAPONS CONTROL STATUS
7. ESSENTIAL TASKS, IF NOT SPECIFIED, ARE PROVIDE SHORT RANGE AIR DEFENSE AND EARLY WARNING.
8. EXAMPLE RESTATED MISSION: _I___ ADA PROVIDES SHORT RANGE AIR DEFENSE AND EARLY WARNING TO DENY ENEMY AERIAL OBSERVATION AND ATTACK OF TASK FORCE_____NLT_____IN ORDER TO ALLOW _____TASK FORCE PURPOSE_FROM MISSION STATEMENT___.

COURSE OF ACTION CONSIDERATIONS

1. WHAT COURSE OF ACTION BEST SUPPORTS:
   - A. POSITIONING OF ASSETS ALONG AIR AVENUES OF APPROACH.
   - B. ESTABLISHING MUTUAL SUPPORT ACROSS THE TASK FORCE.
   - C. ALLOWING OVERLAPPING FIRE WITH ADJACENT AIR DEFENSE UNITS.
   - D. PROVIDING SECURITY FOR FORWARD DEPLOYED AIR DEFENSE ASSETS.
   - E. ESTABLISHING COVERAGE OF ALL THE COMMANDERS PRIORITIES.
   - F. ALLOWING FLEXIBILITY TO REPOSITION ASSETS FOR AIR DEFENSE OF CRITICAL EVENTS AND ASSETS THROUGHOUT THE OPERATION.
   - G. ALLOWING RESUPPLY OR PREPOSITIONING OF MISSILES TO FIRE UNITS.

OTHER PLANNING FACTORS AND TTPs:

- IF AT ALL POSSIBLE ALLOW FOR GENERAL SUPPORT ASSETS WITHIN THE TASK FORCE TO RETAIN FLEXIBILITY OF POSITIONING FOR DEFENSE OF CRITICAL ASSETS.

- ENSURE THERE IS A COMMAND AND CONTROL RESPONSIBILITY ASSIGNED WHENEVER TWO OR MORE TEAMS ARE DEFENDING OR SUPPORTING THE SAME ASSET OR FORCE.

- IF A NIGHT CAPABILITY EXISTS, ENSURE THERE IS A PLAN TO SUSTAIN 24 HOUR OPS.

- CLEARLY DEFINE THE COMMAND OR SUPPORT RELATIONSHIP FOR EACH TEAM TO AVOID
RESUPPLY AND POSTIIONING CONFLICTS.

INTELLIGENCE PREPARATION OF THE BATTLEFIELD

ADA IPB

DEFINE THE BATLEFIELD ENVIRONMENT:

AREA OF OPERATIONS(AO): EXTENDS TO THE MAXIMIMUM EFFECTIVE RANGE OF THE AIR DEFENSE WEAPON SYSTEMS WITHIN THE TASK FORCE AREA OF OPERATIONS.

AREA OF INTEREST(AO): CONSISTS OF AN AREA THAT IS DEFINED BY SCATTERED POINTS THAT INCLUDE:

LOCATION OF TACTICAL BALLISTIC MISSILES LAUNCHERS
LOCATION OF THREAT AIRFIELDS
LOCATION OF FAARPS
LOCATION OF AIDS TO NAVIGATION
RANGE CAPABILITIES OF THREAT AIRCRAFT
ALTITUDE AND RANGE CAPABILITY OF TBMs
SORTIE RATES PER DAY YOUR UNIT AREA

DEFINE THE BATTLEFIELD EFFECTS:

ENEMY AIR PROBABLE TARGET ASSETS (FA, MECH, RADAR, C2)
LIKELY AIR AVENUES OF APPROACH (DO THEY PROVIDE EASE OF NAVIGATION? DO THEY PROVIDE PROTECTION AND MASKING FOR THE AIRCRAFT FROM WEAPONS AND RADAR? DO THEY ALLOW EVASIVE MANEUVERING? DO THEY SUPPORT GROUND FORCE OPERATIONS?)
LIKELY DROP ZONES, LANDING ZONES, AND PICKUP ZONES (ARE THEY NEAR GROUND FORCE OBJECTIVES? DO THEY PROVIDE COVER AND CONCEALMENT TO THE DELIVERED FORCES?)
EFFECTS OF WEATHER ON AIR OPERATIONS
EXPECTED TIMES ON TARGET BASED ON WEATHER AND SYNCH WITH GROUND FORCE

EVALUATE THE THREAT:

FOCUS ON THREATS FROM:
UNMANNED AERIAL VEHICLES
MISSILES(CRUISE AND BALLISTIC)
FIXED AND ROTARY WING AIRCRAFT
AIRBORNE AND AIR ASSAULT FORCES
AIRCRAFT ORDNANCE RANGES AND RELEASE POINTS
TECHNICAL CAPABILITIES OF THE AIRCRAFT:
ALL WEATHER
NIGHT CAPABLE
MAX AND MIN SPEEDS, CEILINGS, AND PAYLOADS(ORDNANCE,
NUMBERS AND TYPES OF EQUIPMENT, TROOPS,) AERIAL REFUELING CAPABILITY.
NAVIGATIONAL CAPABILITIES

DETERMINING THREAT COURSES OF ACTION:

DO NOT DETERMINE AIR COA'S INDEPENDENT FROM MANEUVER FORCES THEY SUPPORT
THE EMPLOYMENT FLEXIBILITY OF MODERN AIRCRAFT MAKE IT EXTREMELY DIFFICULT
TO PREDICT COA'S, HOWEVER, CONSIDER THE FOLLOWING:
LIKELY LOCATION OF FAARPS
LIKELY TIMING OF AIR STRIKES OR AIR ASSAULT OPERATIONS
LIKELY TARGETS AND OBJECTIVES
LIKELY AIR CORRIDORS
WHEN WILL THE AIR BE USED TO SUPPOF

AIR DEFENSE EMPLOYMENT

ADA EM

OFFENSIVE TTPS

- POSITION ASSETS FORWARD WITH RECON
- MAXIMIZE MANEUVER COVERAGE
- RETAIN COVERAGE OF C2 AND CSS
- PROVIDE COVERAGE FOR CHOKE PTS, BRIDGES, OR RESTRICTED MANEUVER SPACE
- POSTION ASSETS FORWARD WITH LEAD ELEMENTS TO DEFEAT AIR SUPPORT OF COUNTERATTACK

DEFENSIVE TTPS

- ALLOCATE ASSETS TO RESERVE
- FOCUS ON AIR AVENUES OF APPROACH
- ENSURE ADA SYSTEMS ARE DUG IN
- IF NO AIR THREAT USE AVENGER FLIR AND .50 CAL FOR PERIMETER DEFENSE
- ENSURE ADEQUATE COVERAGE OF BSA
- PREPOSITION MISSILES

ESTABLISHING ADA PRIORITIES

COMMANDER'S INTENT

SCHEME OF MANEUVER

AIR IPB

METT-T

EVALUATING ADA PRIORITIES

CRITICALITY - ASSETS OR EVENTS THAT ARE ESSENTIAL TO MISSION SUCCESS.

VULNERABILITY- MEASUREMENT OF SUSCPTIBILITY TO ENEMY AIR ATTACK

RECOUPERABILITY- HOW DIFFICULT TO RECOVER FROM INFLICTED DAMAGE

THREAT- LEVEL OF PRIORITY TARGET TO ENEMY AIR ATTACK.

AIR DEFENSE EMPLOYMENT PRINCIPLES

MASS- THE CONCENTRATION OF ADA COMBAT POWER. TO MASS AIR DEFENSE ASSETS COMMANDERS MAY HAVE TO ACCEPT RISK IN OTHER AREAS OF THE BATTLEFIELD.

MIX - THE COMBINATION OF COMPLEMENTARY WEAPON SYSTEMS TO OFFSET THE LIMITATIONS OF ONE ANOTHER. GUNS AND MISSILES.

MOBILITY- ABILITY TO MOVE WHILE RETAINING THE ABILITY TO PROVIDE COVERAGE. MUST EQUAL MOBILITY OF SUPPORTED ASSET.

INTEGRATION- CLOSE COORDINATION OF ACTION AND UNITY OF EFFORT WHICH MAXIMIZES OPERATIONAL EFFECTIVENESS.

AIR DEFENSE EMPLOYMENT GUIDELINES

MUTUAL SUPPORT- ONE SYSTEM CAN ENGAGE TARGETS IN DEAD SPACE OF ANOTHER SYSTEM

OVERLAPPING FIRES - ENGAGEMENT RANGES OVERLAP, NO GAPS BETWEEN SYSTEMS

BALANCED FIRES - POSITIONED TO DELIVER EQUAL VOLUMES OF FIRE IN ALL DIRECTIONS

WEIGHTED COVERAGE - CONCENTRATE FIRE ON AIR AVENUES OF APPROACH

EARLY ENGAGEMENT - POSITION ASSETS TO ENGAGE TARGETS BEFORE THEY RELEASE WEAPONS

DEFENSE IN DEPTH - POSITION ASSETS SO THREAT COMES UNDER INCREASING VOLUMES OF FIRE

ADA OPERATIONS

ADA OPERATIONS

AIR DEFENSE WARNINGS

ADW RED
AIR OR MISSILE ATTACK IMMINENT OR IN PROGRESS

ADW YELLOW
AIR OR MISSILE ATTACK PROBABLE

ADW WHITE
AIR OR MISSILE ATTACK NOT LIKELY

WEAPONS CONTROL STATUS

WEAPONS HOLD-
FIRE ONLY IN SELFDEFENSE (MOST RESTRICTIVE)

WEAPONS TIGHT-
POSITIVELY IDENTIFY AS HOSTILE

WEAPONS FREE-
ANYTHING NOT IDENTIFIED AS FRIENDLY (LEAST RESTRICTIVE)

LOCAL AIR DEFENSE WARNINGS

CHANGES ADW AT DIVISION LEVEL OR LOWER:

DYNAMITE - AERIAL TARGETS ARE INBOUND ATTACK IN PROGRESS.

LOOKOUT - AERIAL TARGETS MAY BE IN THE AREA OF INTEREST BUT ARE NOT THREATENING

SNOWMAN - NO THREATENING AERIAL TARGETS ARE IN THE AREA.

COMMAND AND SUPPORT RELATIONSHIPS

	DS	GS	R	GSR
WHO ESTABLISHES PRIORITIES	SUPPORTED COMMANDER	ADA CDR WHO EST SUPPORT RELATIONSHIP	SUPPORTED COMMANDER	ADA CDR WHO EST SUPPORT RELATIONSHIP
WHO POSITIONS ADA FIRE UNITS	ADA CDR W/ SPT CDR APPROVAL	ADA CDR W. LOCAL GROUND CDR	ADA CDR W/ APPROVAL OF "R" ADA CDR	ADA CDR W. APPROVAL OF "R" ADA CDR
WHO COORDINATES FOR TERRAIN USED BY ADA UNITS	SUPPORTED CDR	ADA CDR WHO EST SUPPORT RELATIONSHIP	REINFORCED ADA CDR	ADA CDR WHO EST SPT RELATIONSHIP
EST LIAISON WITH	SUPPORTED UNIT	AS REQUIRED	AS REQUIRED & REINFORCED UNIT	AS REQUIRED & REINFORCED UNIT
EST COMMO WITH	SUPPORTED UNIT	AS REQUIRED	AS REQUIRED & REINFORCED UNIT	AS REQUIRED & REINFORCED UNIT

BACK

COMBINED ARMS FOR AIR DEFENSE

PASSIVE AIR DEFENSE - Measures taken to avoid detection or minimize the effects of hostile air action (camouflage, cover, concealment, dispersion).

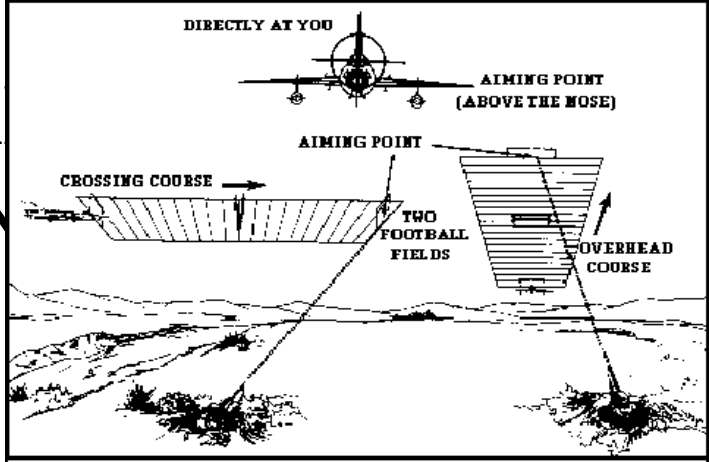
ACTIVE AIR DEFENSE - Direct action taken to destroy or reduce the effectiveness of enemy air attack.

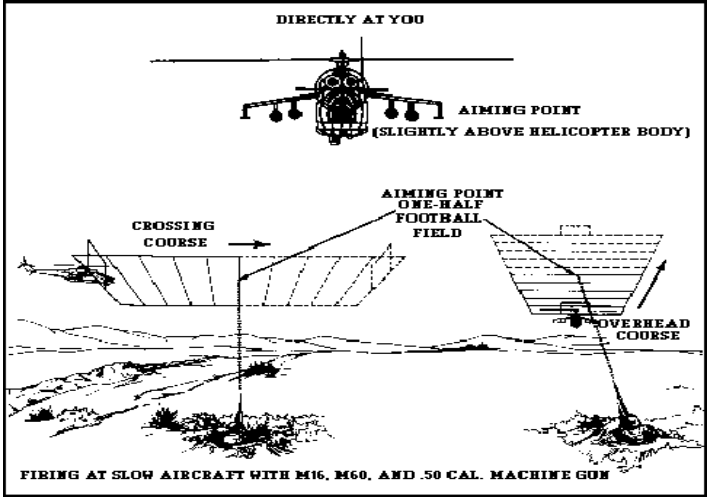
COMBINED AR
DEFEN

FOOTBALL FIELD TECHNIQUE

BASIC RULE: Mass all available fire in front of the aircraft

TARGET	PROFILE	AIMPOINT
Jet/cruise missile	Crossing	Two Football Fields in Front of aerial platform Nose
Jet/cruise missile	Overhead	Two Football Fields in Front of Aerial platform Nose
Jet/cruise missile	Directly at You	Slightly Above Aerial platform Nose
Helicopter	Hovering	Slightly Above Helicopter Body
Helicopter/UAV	Directly at You	Slightly Above Helicopter Body
Helicopter/UAV	Crossing	One-Half Football Field in Front of Nose





FAAD C3I CAPABILITIES

EARLY WARNING AND ID FROM AWACS, HIMAD, AEGIS
TRACK UPDATE RATE: EVERY 6 SECONDS WITH LSDIS RADAR, EVERY 2 SECONDS WITH SENTINEL RADAR

ADC3I CAPABILITIES

WILL HELP THE MANEUVER BATTLE CAPTAIN WITH REAL TIME UNIT LOCATIONS FOR CLEARANCE OF FIRES AND FRATRICIDE PREVENTION

BRIGADE TOC

FORCE OPS (PLANNING)

ENGMT. OPS (CURRENT)

BTRY CP SENSOR C2 NODE
CAN DISPLAY UP TO 64 TRACKS
DISPLAYS ALL AD SYSTEMS BY PLUGGER GRID
ONE COMPUTER - CURRENT OPS
ONE COMPUTER - FUTURE PLANNING
REAL TIME MONITORING OF CAS, FRIENDLY AASLT
DIGITIZED TERRAIN AND 3-D RANGE FANS
GPS GRID OF UNIT LOCATIONS
REAL TIME AIR AND MISSILE WARNINGS

BATTLION TOC AND ALL FIRE UNITS

HANDHELD TERMINAL UNIT

AIR TRACK DISPLAY CAPABILITY
PLT CP, SEC CP, WEAPONS SYSTEMS
EACH CAN DISPLAY 16 TRACKS
GPS GRID OF SYSTEM LOCATIONS
REAL TIME AIR AND MISSILE WARNINGS

AIR DEFENSE SYSTEM CAPABILITES MATRIX

	PERSONNEL CREW/SEC PLT/BTRY	AMMO BASIC LOAD	ACQUISITION RANGE (APPROX.)	ENGAGE. RANGE (APPROX.)	ENGAGE. ALTITUDE (APPROX.)	MUTUAL SUPPORT DIST.	EMPLACE MENT TIME	RELOAD TIME
STINGER	2/TEAM 6TM/SEC 1 SEC/PLT	6 MSLS/TM 4 WPNS RDS/ 2 MSL RDS	VISUAL	4 KM +	2KM	2 KM +	10 SEC	N/A
AVENGER	2/AVG 6AVG/PLT 3 PLT/BTRY	8 MSLS	VISUAL/ FLIR (9-10 KM)	4 KM +	3 KM +	3 KM +	6 MIN	6 MIN
LSDIS RADAR	5/TM 2 TM/SEC 3 SEC/PLT	1 RADAR/ TEAM	20 KM	NA	NA	NA	15 MIN	NA
BSFV	5/SQD 1 SQD/BSFV 4 BSFV/PLT 2 PLT/BTRY	6 MSLS 5 TOWS 300 RTF 25MM 600 STO 25MM	VISUAL/ IR SCOPE	ST 4 KM + TOW 3750M 25MM 2500M COAX 900M	3 KM	2 KM	HASTY 10 SEC REG: 6 MIN	ST 7 MIN TOW 2 MIN
LINEBACKER	4/SQD 1 SQD/LB 4 LB /PLT 2 PLT/BTRY	10 MISSLES/ 4 RTF 300 RTF 25MM 600 STO 25MM	VISUAL/ FLIR 9-10 KM	4 KM (STING) 2500M 25 MM 900M COAX	3 KM+	3 KM	FIRE ON THE MOVE	4 MIN
PATRIOT AIR BREATHING THREATS	92/BTRY LCHR PLT:27 FIRE CTRL:22 MAINT PLT:31 HQ:12 8 LCHR/BTRY	2LCHR/SEC 4 MSLS/LCHR 32 MSLS/BTRY	120 KM	50 KM +	26 KM +	15 KM 25 KM DEEP	60 MIN	60 MIN
PATRIOT TACTICAL BALLISTIC MISSILES	92/BTRY LCHR PLT:27 FIRE CTRL:22 MAINT PLT:31 HQ:12 8 LCHR/BTRY	2LCHR/SEC 4 MSLS/LCHR 32 MSLS/BTRY	120 KM	20 KM +	26 KM +	15 KM 10 KM DEEP	60 MIN	60 MIN
GROUND BASED SENSOR	5/SEC 6 SEC/PLT	1 RADAR/ SEC	40 KM	NA	NA	NA	15 MIN	NA

BACK

THREAT FIXED WING AIRCRAFT

Armament: 1 twin-barrel 23mm(GSH-23) cannon and four underwing hardpoints for 3,300lbs of ordinance including up to 4xAA-2 'Atoll', AA-8 'Aphid' air-to-air missiles or AS-7 'Kerry' air-to-surface missiles. Two unguided rockets pods. Inner wing pylons or centerline pylon can be used for drop tanks.
Cbt Radius: 460ml/740km Speed: 1000mph/ 1600km/m
All WX: Limited Night Capable: YES
Common Missions: Single seat multi-role fighter

AC type: MIG-21 "FISHBED"

Armament: 6 close range AA-8 'Aphid' air-to-air missiles or 4xAA-8 & 2xAA-2 'Alamo' on three underwing pylons. One 30mm(GSH-301) cannon fixed. Able to carry bombs, submunition dispensers, Napalm tanks, or rockets.
Cbt Radius: 900ml/1450km/h
Speed: 1520mph/ 2445km/h
All WX: YES Night Capable: YES
Common Missions: Air Superiority, Ground ATK
Additional Capabilities: Naval Ops

AC type: MIG-29 "FULCRUM"

Armament: Nine pylons, each wingroot glove and outer wings for up to 17,857lb of weapons. include AS-7, AS-10, AS-11, AS-12, AS-13, AS-14 AS-17 ASMs, LGBs, 55 to 370mm rockets and AA-8 AAMs. One fixed 30mm cannon on the starboard side of fuselage.
Cbt Radius: 650ml/1050km Speed: 892mph/1435kmh/Mach 1.35
All WX: YES Night Capable: YES
Common Missions: CAS,Bomber, Recon
Additional Capabilities: Electronic warfare/Jammer

AC type: Su-24 "FENCER"

Armament: One twin barrel 30mm gun(AO-17A). Eight underwing pylons for 9700lbs for bombs, rockets, gunpods, and air-to-surface missiles. Two small outboard pylons for AA-2 'Atoll' or AA-8 'Aphid' air-to-air missiles for self defense.
Cbt Radius: 345ml/556km Speed:606mph/ 975km/h
All WX: YES Night Capable: YES
Common Missions: Single seat CAS
Additional Capabilities: SEAD

AC type: Su-25 "FROGFOOT"

COMMON FIXED WING THREAT AIR CAPABILITIES

WEAPON	RANGE	MISSION
AS-1 KENNEL	11 KM	ANTI SHIP SARH
AS-2 KIPPER	15 KM	ANTI-SHIP NUC
AS-3 KANGAROO	10 KM	AUTO-PILOT NUC
AS-4 KITCHEN	400 KM	ANTI-SHIP ARM
AS-5 KELT	320 KM	ANTI-SHIP ARM
AS-6 KNIGFISH	650 KM	ARM
AS-7 KERRY	20 KM	COM. GUIDED
AS-9 KYLE	25 KM	LASER GUIDED
AS-10/12 KAREN	25 KM	COM GUIDED
AS-11 KILTER	50 KM	ANTI PATRIOT RADAR MISSILE
AS-13 KINGBOLT	60 KM	COM GUIDED
AS-14 KEDGE	27 KM	LASER GUIDED
AS-15 KENT	2500KM	CRUISE MISSILE
AS-16 KICKBACK	100 KM	NUCLEAR
AS-17 KRYPTON	50 KM	ARM ANTI AWACS
AS-18 KAZOO	120KM	COM GUIDED
AS-20 KAYAK	130 KM	ANTI SHIP

Armament: One 30mm gun (GSH-301) in starboard winroot. Up to 10 air-to-air missiles including AA-8, AA-9, AA-10,AA-11 and bombs with total capacity up to 13,228lb.
Cbt Radius: 930ml/1500km
Speed: 1550mph/ 2500km/h
All WX: YES Night Capable: YES
Common Missions: Air Superiority Fighter
Additional Capabilities: Ground attack aircraft

AC type: Su-27 "FLANKER"

IRELAND ROTARY WING AIRCRAFT

COMMON ROTARY WING THREAT AIR CAPABILITIES

WEAPON	RANGE
AT-2 SWATTER	4 KM
AT-3 SAGGER	3 KM
AT-5 SPIRAL	5 KM
AT-9 ATAKA	10 KM
AT-16 VIKHR	10 KM
ROCKETS	1.5 KM
12.7MM CANNON	1.5 KM
23 MM GUN POD	3 KM
30 MM CANNON	4 KM

AC type: MI-24 "HIND"

Armament: One remote controlled 12.7mm four-barrel gatling gun under nose turret. Four AT-2/AT-3/AT-6 ATGMs on rails at wingtips, 4 underwing pylons for rocket pods, gun pods, bombs, air-to-air missiles.
Cbt Radius: 100ml/160km Speed: 208mph/335km/h
All WX: YES Night Capable: YES
Common Missions: Gunship Attack Helicopter, Recon
Additional Capabilities: NBC, Recon
Troop Capacity: 8-10

AC type: KA-50 "HOKUM"

Armament: 4 underwing pylons capable of up the 614lbs. Typical weapons include the 80mm and 55mm rockets, AT-9, AT-16, bombs, AA-8, and AA-11 and one single barrel fixed 30mm cannon on the starboard side of the nose.
Cbt Radius: 155ml/ 250km Speed: 193mph/ 310km/h
All WX: YES Night Capable: YES
Common Missions: CAS

AC type: MI-8/17 "HIP"

Armament: For Mi-17C, E models, 12.7mm MG in nose. Up to 3307lb capacity on 6 hardpoints. Typical weapons include: 55mm rocketpods, AT-2 'Swatter' or AT-3 'Sagger' Cbt Radius: 155ml/ 280km Speed: 145mph/ 230km/h
All WX: Yes Night Capable: Yes
Common Missions: Attack/Transport Helicopter Hip C, E, HAdditional Capabilities: Communication Jamming/ ECM platform on the Hip J and K. Flight crew of 3 plus 32 PAX

AC type: MI-28 "HAVOC"

Armament: One (NPPU-28) 30mm turret mounted gun at nose. Two pylons under each stub-wing, each pylon capable of one rocketpod or cannon and 4xAT-6 'Spiral' ATGMs each.
Cbt Radius: 124ml/200km Speed: 186mph/ 300km/h
All WX: YES Night Capable: YES
Common Missions: Attack Helicopter
Additional Capabilities:

AC type: MI-6 "HOOK"

Armament: Some MI-6 are fitted with a 12.7mm MG in fuselage
Cbt Radius: 187ml/ 300km
Speed: 186mph/ 300km/h
All WX: Fair WX Night Capable: YES
Common Missions: Heavy Transport Helicopter
Troop Capabilities: 65 troops

AC type: MI-2 "HOPLITE"

Armament: Up to four AT-3 'Sagger' or AT-5 'Spandrel'. ATGMs or Rocket and Gun pods.
Cbt Radius: 240ml/390km
Speed: 130mph/ 210km/h
All WX: Night Capable: YES
Common Missions: General purpose light Helicopter /CAS
Additional Capabilities: troop capacity: 10 troops. freight of 1543lbs, or 1763lbs sling load.

AC type: MI-26 "HALO"

Armament: NONE

Cbt Radius: 190ml/300+km
Speed: 183mph/ 295km/h
All WX: YES Night Capable: YES
Common Missions: Heavy transport helicopter
Additional Capabilities: troop capacity: 85 troops.
Freight carried as a sling load of 44,092lbs

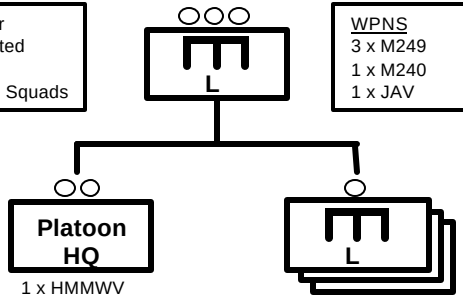
MOBILITY AND SURVIVABILITY
(INCLUDING NBC)

- LIGHT ENGINEER PLATOON
- MECHANIZED ENGINEER COMPANY
- ENGINEER EQUIPMENT
- THREAT ENGINEERS
- TERRABASE EXAMPLES
- MOBILITY PLANNING CONSIDERATIONS
- MOBILITY PLANNING CONSIDERATIONS
- BREACHING WITH A MICLIC
- LINEAR ROUTE CLEARANCE METHOD
- COMBAT ROUTE CLEARANCE METHOD
- COMBINED ROUTE CLEARANCE METHOD
- COUNTERMOBILITY / SURVIVABILITY PLANNING CONSIDERATIONS
- OBSTACLE CONTROL MEASURES
- OBSTACLE INTENT GRAPHICS
- DISRUPT RESOURCE FACTOR
- FIX RESOURCE FACTOR
- TURN RESOURCE FACTOR
- BLOCK RESOURCE FACTOR
- DISRUPT GROUP INTEGRATION
- TURN GROUP INTEGRATION
- RESUPPLY METHODS
- US SCATTERABLE MINEFIELD SYSTEMS
- FASCAM PLANNING
- VOLCANO MINEFIELDS
- MODULAR PACK MINE SYSTEM MOPMS
- MOPP LEVELS
- NBC PLANNING CONSIDERATIONS
- TYPES OF DECONTAMINATION
- DECONTAMINATION MATRIX
- SMOKE USAGE
- OFFENSIVE SMOKE USE
- DEFENSIVE SMOKE USE

Light Engineer Platoon

1 x Officer
29 x Enlisted

3 x 9-man Squads



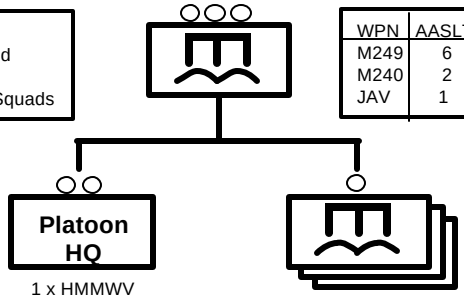
1 x HMMWV

WPNS
3 x M249
1 x M240
1 x JAV

ABN / AASLT Engineer Platoon

1 x Officer
29 x Enlisted

3 x 9-man Squads

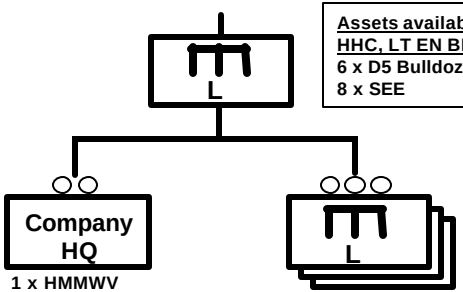


1 x HMMWV
2 x SEE

1 x HMMWV w/ TRAILER

WPN	AASLT	ABN
M249	6	3
M240	2	1
JAV	1	1

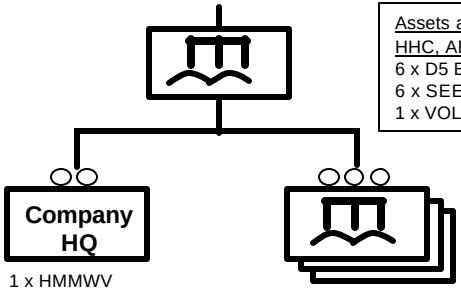
Light Engineer Company



1 x HMMWV
1 x VOLCANO
4 x MOPMS RCU

Assets available in HHC, LT EN BN
6 x D5 Bulldozer
8 x SEE

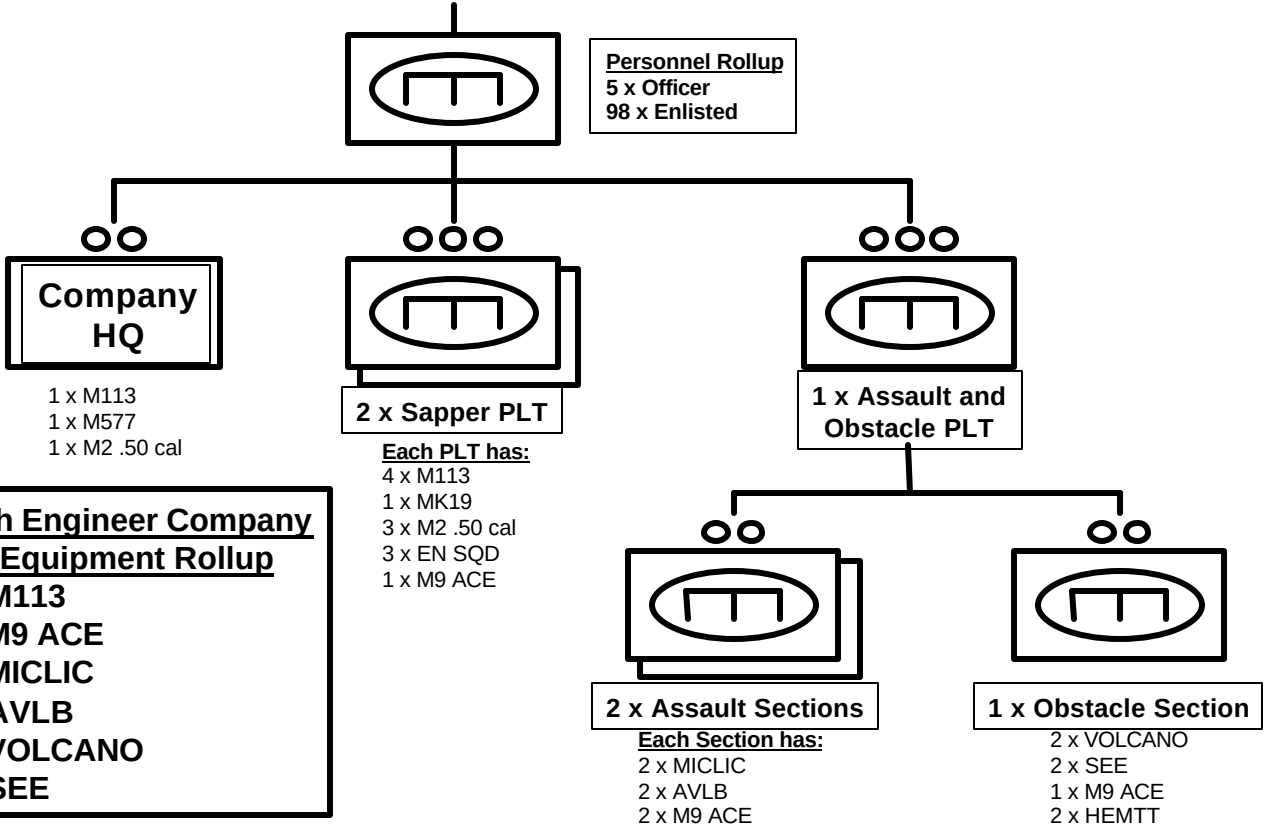
ABN / AASLT Engineer Company



1 x HMMWV
1 x SEE
4 x MOPMS RCU

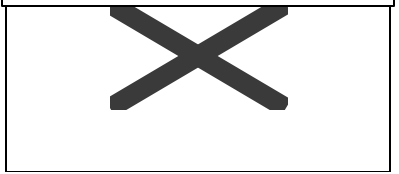
Assets available in HHC, ABN/AA EN BN
6 x D5 Bulldozer
6 x SEE
1 x VOLCANO

Mechanized Engineer Company



ENGINEER EQUIPMENT

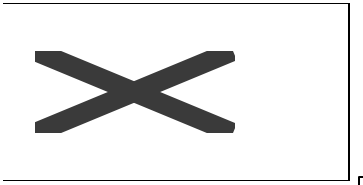
M9 ARMORED COMBAT EARTHMOVER (ACE)



- Employed in Blade Teams (BT)
- Vehicle fighting positions
  - ✓ Hull Defilade = 1.5 BTH*
  - ✓ Turret Defilade = 3.5 BTH*
- Anti-tank ditches
  - ✓ 50m - 70m per BTH*

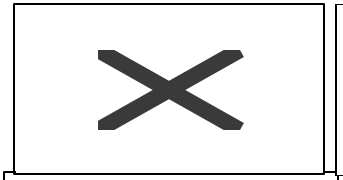
* BTH = Blade Team Hour

SMALL EMPLACEMENT EXCAVATOR (SEE)



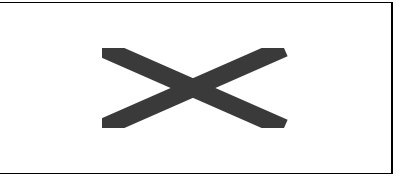
- Employed individually
- Constructs dismounted positions
  - ✓ Individual = 0.5 hours
  - ✓ Crew-served = 1.0 hours
- Moves loose soil / carries material

MULTIPLE DELIVERY MINE SYSTEM (VOLCANO)



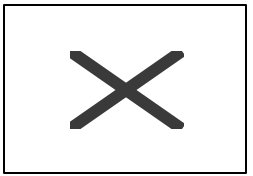
- Emplaces 120m x 1100m minefield in 10 - 15 minutes

ARMORED VEHICLE LAUNCHED BRIDGE (AVLB)



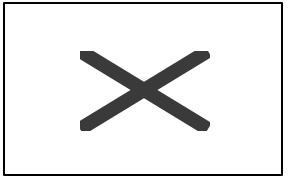
- Spans 15m gap for MLC 70
- Spans 18m gap for MLC 60
- Deploys in 3 - 5 minutes

MINE CLEARING LINE CHARGE (MICLIC)



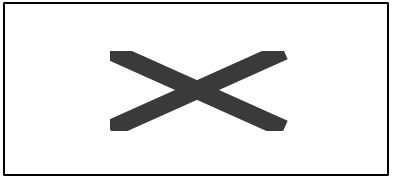
- Breach lane = 14m x 100m
- Deploys in 1 - 3 minutes
- Minimum Safe Distance = 800m

MODULAR PACK MINE SYSTEM (MOPMS)



- 35m Radius Minefield
- 21 mines - 17 AT / 4 AP
- 4 hour duration
- Recycled 3 times with RCU

ARMORED VEHICLE LAUNCHED MICLIC (AVLM)



- AVLB chassis with bridge downloaded
- Mounts up to 2 MICLICS
- More survivable / maneuverable than trailer

M1A2 - Bangalore Torpedo

10 x 5' Sections per Kit / 15 lbs. per Section
Clears 3 m footpath through wire, some mines
Effective against trip/pressure-fuze AP mines
Radius of Danger Area = 1000 m (in open)
Minimum Safe Distance (MSD) = 200 m (covered)
Employment Planning Time = 5 minutes

MODERNIZED DEMOLITION INITIATORS (MDI)

M12 = 500' Shock Tube + LS Blasting Cap
M13 = 1000' Shock Tube + LS Blasting Cap

M14 = 7.5' Time Fuze (5 minutes) + HS Blasting Cap

M81 = Fuze Igniter (adapts to shock tube or time fuze)

M11 = 30' Shock Tube + HS Blasting Cap

THREAT ENGINEERS

ENGINEER RECON PATROL (ERP)

Maybe and IRM,

or a BRDM,

or a BMP,

or any combination

MOBILE OBSTACLE DETACHMENT (MOD)

Typically 2 - 3 x GMZ

and, maybe an IMR / BAT

or an Engineer Squad BMP

or any combination

MOVEMENT SUPPORT DETACHMENT(MSD)

Reconnaissance and Mine Clearing Group

Engineer BMP

KMT-5

KMT-6

IRM

MTK

Road / Bridge Construction and Repair Group

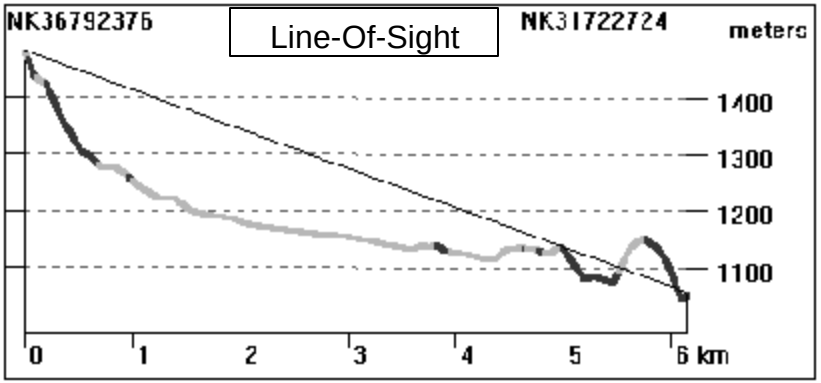
TMM

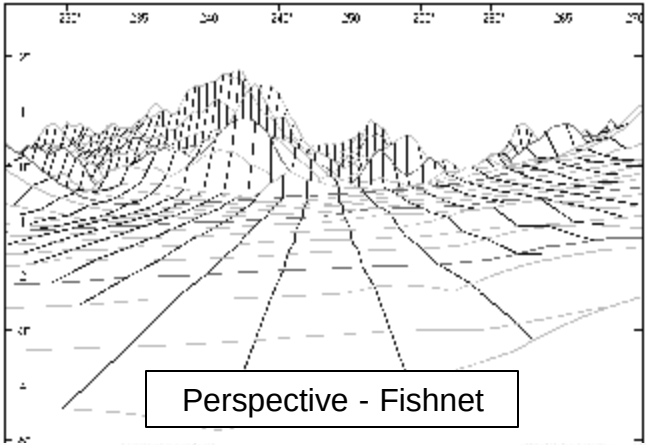
BAT

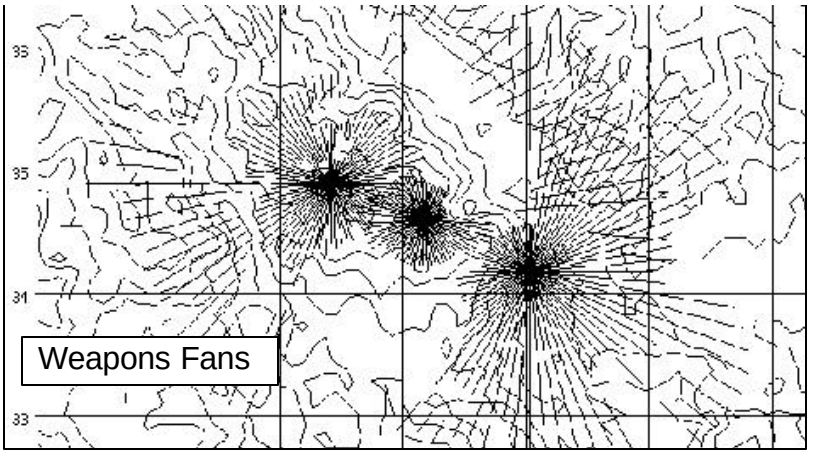
MTU

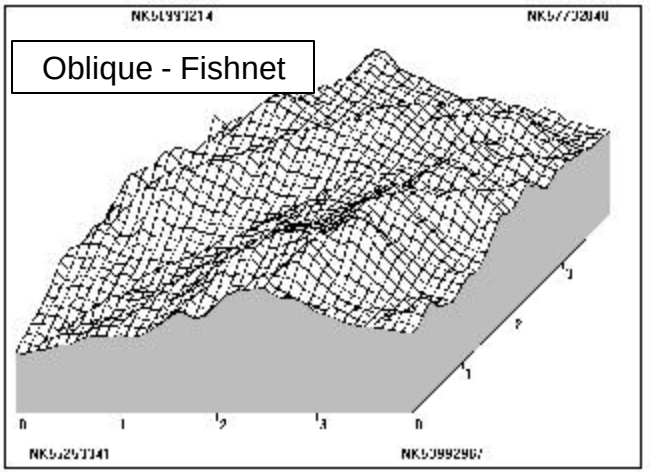
IMR

TERRABASE EXAMPLES









Engineer Battlefield Assessment for Mission Analysis

General
- Engineer combat power: Squads / M113 / MICLIC / AVLB / ACE / Volcano
- Identify Essential Engineer Tasks required to accomplish the mission
- Terrain Visualization Products - Terrabase II
- Recommend PIRs and HVTs to support the maneuver plan

Offensive Operations
Terrain Analysis:
- Impact on mobility of the friendly force - identify key terrain
- Impact on breaching capability - identify methods that will / will not work
- Impact on enemy countermobility/survivability operations

Friendly Engineer Capability:
- Estimate # of obstacles - minefield, tank ditch, FASCAM, wire - that the force is capable of breaching
- Estimate number of breach lanes the force is able to reduce based on the the terrain, the SITEMP, and templated enemy obstacle array
- Recommend breaching methods based on obstacles, terrain, and soil
- Identify FASCAM systems available and capabilities - recommend uses

Enemy Engineer Capability:
- Estimate and template tactical / protective obstacle effort and intent
- Template FASCAM capability, locations and triggers
- Estimate survivability effort, level, and possible priorities

Defensive Operations
•Terrain Analysis
- Impact on obstacle effort - identify natural obstacles !!
- Impact of soil conditions / slope / trafficability on survivability operations
- Impact on enemy maneuver and friendly CATKs

Friendly Engineer Capability
- Estimate "usable" versus "total" time available
- Estimate #, effect, type, and size of minefields, tank ditch, wire obstacles
- Estimate # and type of fighting positions - "turret *versus* hull"
- Blade effort analysis - compare "tank ditch" *versus* "fighting positions"
- Identify FASCAM systems available and capabilities - recommend uses

Enemy Engineer capability
- Estimate breaching assets available - capability and location
- Estimate use of Engineer Recon Patrols (ERP)
- Template FASCAM capability, locations and triggers

Maneuver Commander's Guidance to the Engineer

BLUF - For all operations, tell the engineer your...
- **Priority of effort (mobility, countermobility, or survivability)**
- **Priority of support (by sub-unit, main effort, or supporting effort)**
- **Intent for employment of available FASCAM systems**

Offensive Operations

BLUF
- **Planning priority by type of breaching operation (deliberate, in-stride, assault, covert)**

Supporting Guidance
- Identify the commander and preferred organization of the breach force
- Determine where to accept risk in terms of redundant breaching assets
- Focus of suppression and obscuration during breaching operations
- Integration of engineers into the R/S plan
- Level / type of combined arms breaching rehearsals
- Purpose and priority for employment of available FASCAM systems
- Purpose / method of deception, if employed
- Harassment of enemy engineers during defensive preparation

Defensive Operations

BLUF
- **Directed obstacle *intent* and priority by obstacle belt / group...**
- ***Target, Relative Location, Effect* (Block, Turn, Fix, Disrupt)**
- **Priority for survivability by sub-unit, system, turret-down/hull-down**

Supporting Guidance
- Priority for digging assets - tank ditch *versus* fighting positions
- Determine where to economize / accept risk in terms of engineer effort
- TF support for obstacle effort and barrier material resupply
- Engineer disengagement criteria and follow-on missions / tasks
- Mobility support for the reserve / CATK force
- Targeting guidance for enemy breaching assets
- Purpose / method of deception, if employed

BACK

MOBILITY PLANNING CONSIDERATIONS

INTELLIGENCE
- Analyze AA's, MC's
- Template obstacles and collect OBSTINTEL
- Integrate engineer PIR and IR in R & S plans
- Use engineers for recon of terrain and obstacles

MANEUVER
- Select breach site location and number of lanes
- Identify support, assault, and breach forces
- Specify conditions for committing the breach force

FIRE SUPPORT
- Plan suppression - echelon FA and mortars
- Employ obscuring / screening smoke
- Plan employment of ADAM/RAAM

MOBILITY/SURVIVABILITY
- ID clear tasks - purpose and priority
- Select primary and alternate reduction methods
- Allocate / task organize reduction assets
- Plan 50% redundancy of reduction assets
- Wargame enemy NP Chem at breach site
- Plan employment of SCATMINE systems
- Plan for transition to defense

AIR DEFENSE
- Protect breach sites

CSS
- Plan MICLIC / explosives resupply
- Plan movement / positioning of defensive CL IV/V

C2
- Plan pyrotechnic signals for breach
- Conduct full-dress breach rehearsal
- Erect lane marking system at TF rehearsal
- Plan guides at breach lane entrance

BREACH TENETS
Intelligence
Breaching Fundamentals
Breaching Organization
Mass
Synchronization

BREACHING FUNDAMENTALS
Suppress Obscure
Secure Reduce

BREACHING ORGANIZATION
Assault Breach Support

TYPES OF BREACHING OPERATIONS
In-Stride Deliberate
Assault Covert

CRITICAL PLANNING STEPS
Determine the Requirements
Allocate Appropriate Assets
Task Organize with Maneuver
Synchronize through Rehearsals

KEY REDUCTION TASKS
Acquire / recon obstacle
Site lane
Establish local security
Reduce the obstacle
Proof
Mark
Report

MOBILITY PLANNING CONSIDERATIONS

OBSTINTEL

- Obstacle location / orientation
- Obstacle composition / complexity
- Location of lanes, gaps and bypasses
- Minefield composition = AT / AP / AHD
- Types of mines = fuze / material
- Location of direct fire weapons
- Location of key terrain

ENGINEER OPORD BRIEFING - OFFENSE

Enemy engineer situation and OBSTINTEL update
Engineer task organization and equipment status
Purpose of engineers
Scheme of engineer operations
    Critical tasks from LD to OBJ
    Actions at obstacles (Breach type/method/drill)
    MICLIC reload plan
    CMOB to support attack
    Transition to defense
CSS and other unresolved issues

ENGINEER PARAGRAPH

1. Purpose
2. Priority of Effort
3. Priority of Support
4. Obstacle List
5. Scatterable Mines
    Type
    Duration
    Approval Authority
6. Obstacle Restrictions / Coordination

Good examples of "Setting the Conditions" include…

✓ The tank and 2 BMPs on OBJ 1 destroyed
✓ SBF 1 occupied and reporting effective suppression
✓ A 300 meter smoke screen in place between the OBJs
✓ The strongpoint covering the obstacle is destroyed
✓ Achieved effective observed fires with AE0001
✓ Local security set, reporting no effective direct fires at breach site

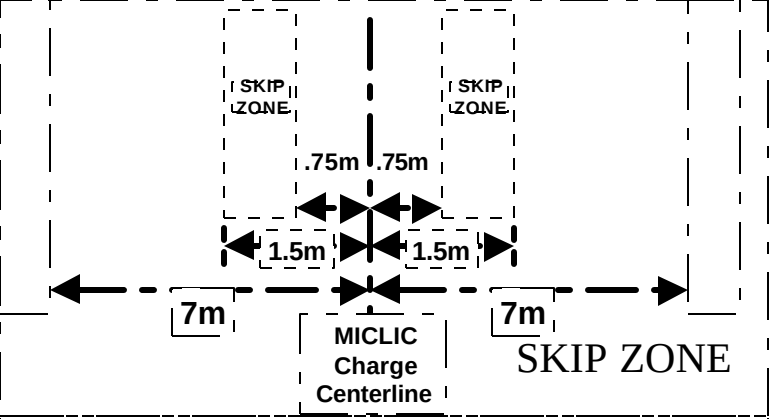
Light Force Reduction Techniques

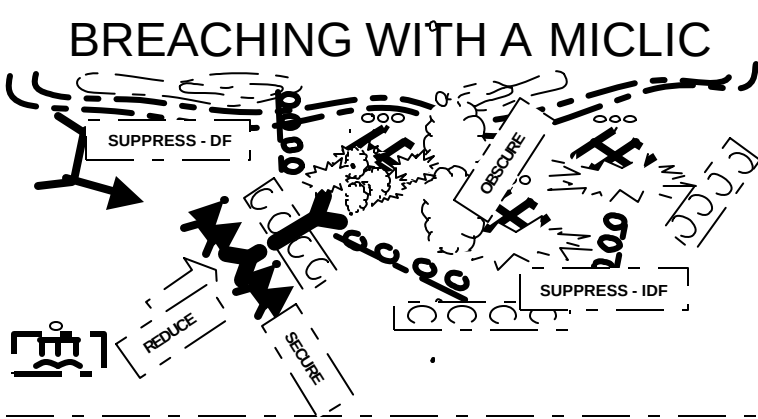
METHOD	CAPABILITY	TIME	LIMITATIONS
Line / Ring Main	1 - 10 x 120m lane	5 -10 min	Drill Training; Time
"Pop and Drop"	2 - 10 x 120m lanes	3 - 5 min	Fuze timing and misfires
Bangalore	1 - 15m footpath	3-5 min	Limited effect on some mines; 1000m MSD for troops in open
Satchel Charge	1 - ATD Breach	10 min	Troop exposure
Grappling Hook	? - 25m toss	Very slow	Time and proximity
Mine Detectors	1 - 8m lane	10 m /min	Time

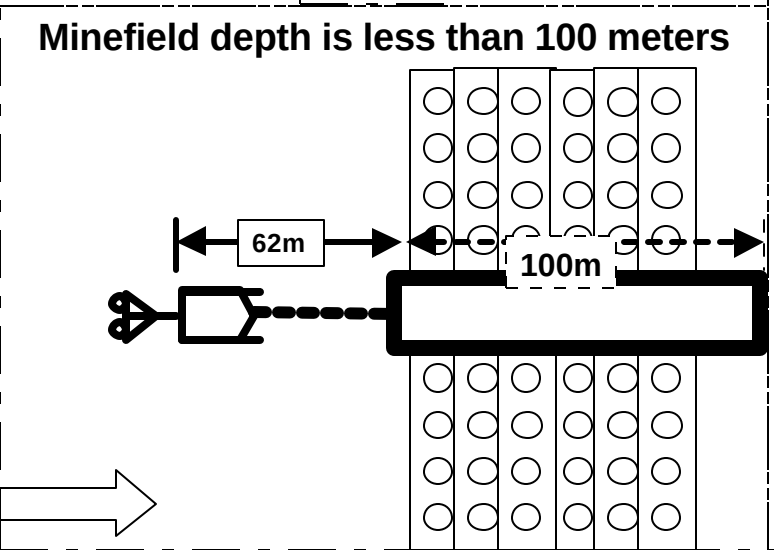
Heavy Force Reduction Techniques

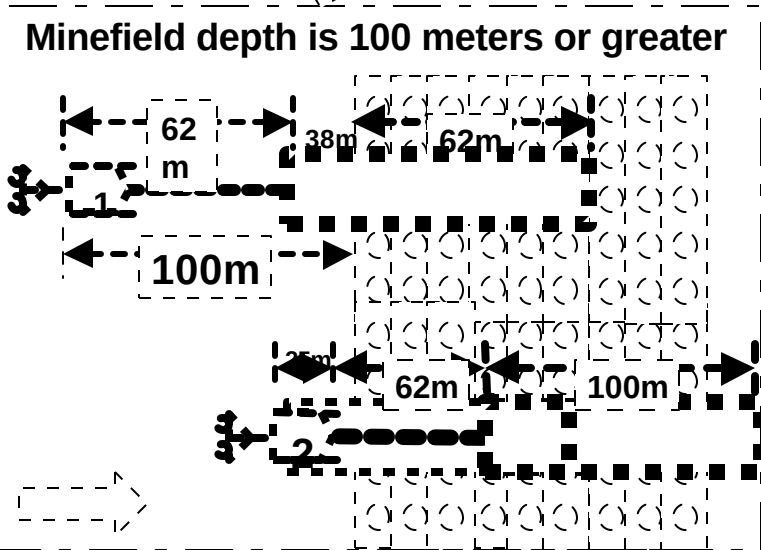
TYPE	METHOD	AVAILABILITY	CAPABILITY	LIMITATIONS	PLANNING TIME
EXPLOSIVE	MICLIC	4 per EN CO	14m x 100m	• Blast-overpressure resistant mines • Skip zone	1 – 3 min
	Sapper Squad	6 per EN CO	Mounted = 10m x 100m Dismounted =1m x 16m	• Vulnerable to enemy fires, AP mines, AHDs	3 – 5 min
MECHANICAL	Mine Clearing Blade	3 per AR CO	2 x 58" Tracks and / or 1 x 4.5m Lane	• Slow • Cannot turn while plowing • Gun tube orientation	2 – 5 min per 100m
	Mine Clearing Roller	1 per AR CO	2 x 44" Tracks and / or 1 x 4m Lane	• Slow • Heavy • Maneuverability	2 – 5 min per 100m
	M9 ACE	7 per EN CO	Can skim (herringbone) a vehicle lane	• Thin armor • Slow, methodical • Vulnerable to AT minestrikes	SLOW; based on operator proficiency
	AVLB	4 per EN CO	MLC 70 = 15m MLC 60 = 18m	• Slow • Maneuverability • BIG signature	3 – 5 min

REDUCTION TECHNIQUES

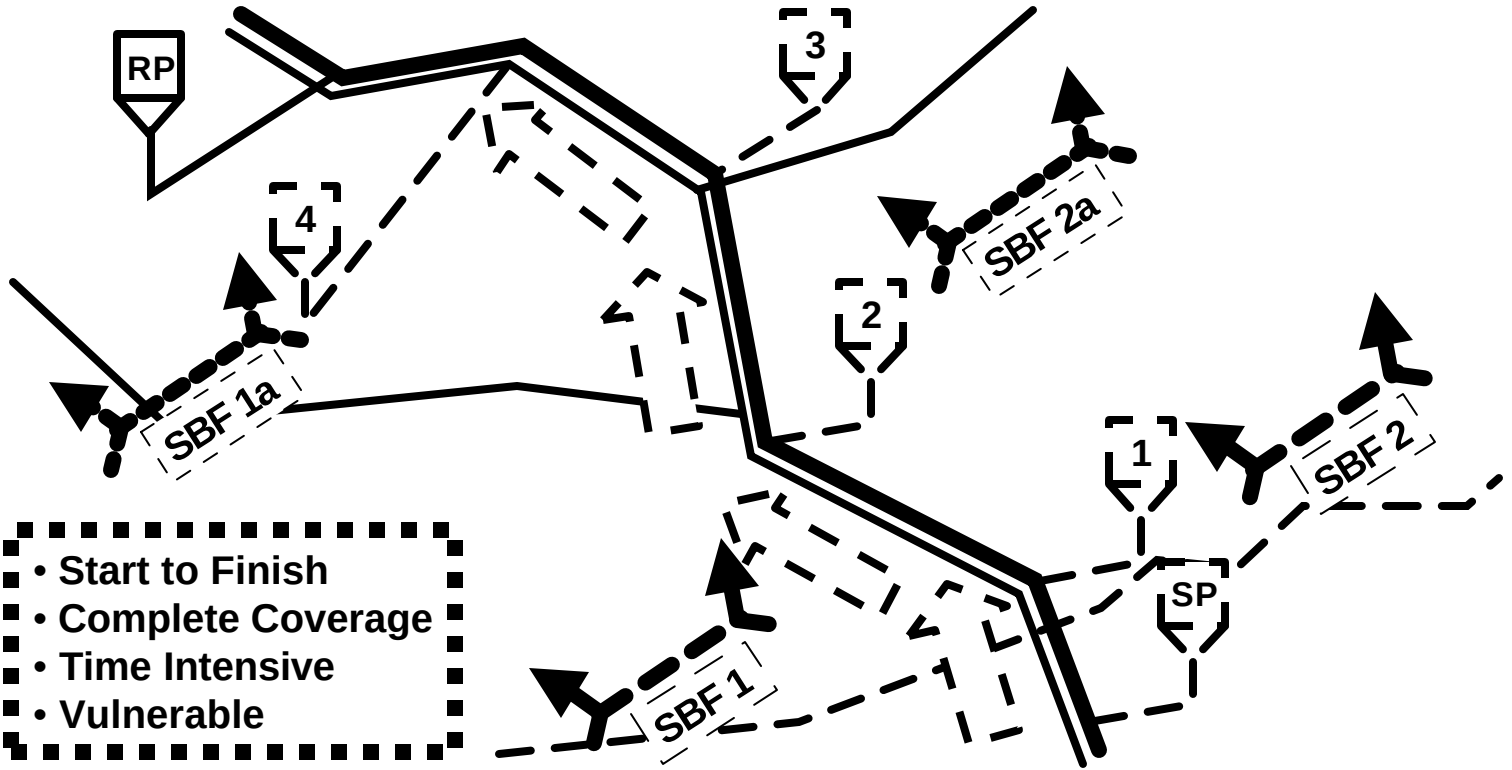

SKIP ZONE
SKIP ZONE
.75m
.75m
1.5m
1.5m
7m
7m
MICLIC Charge Centerline
SKIP ZONE


BREACHING WITH A MICLIC
SUPPRESS - DF
OBSCURE
SUPPRESS - IDF
REDUCE
SECURE

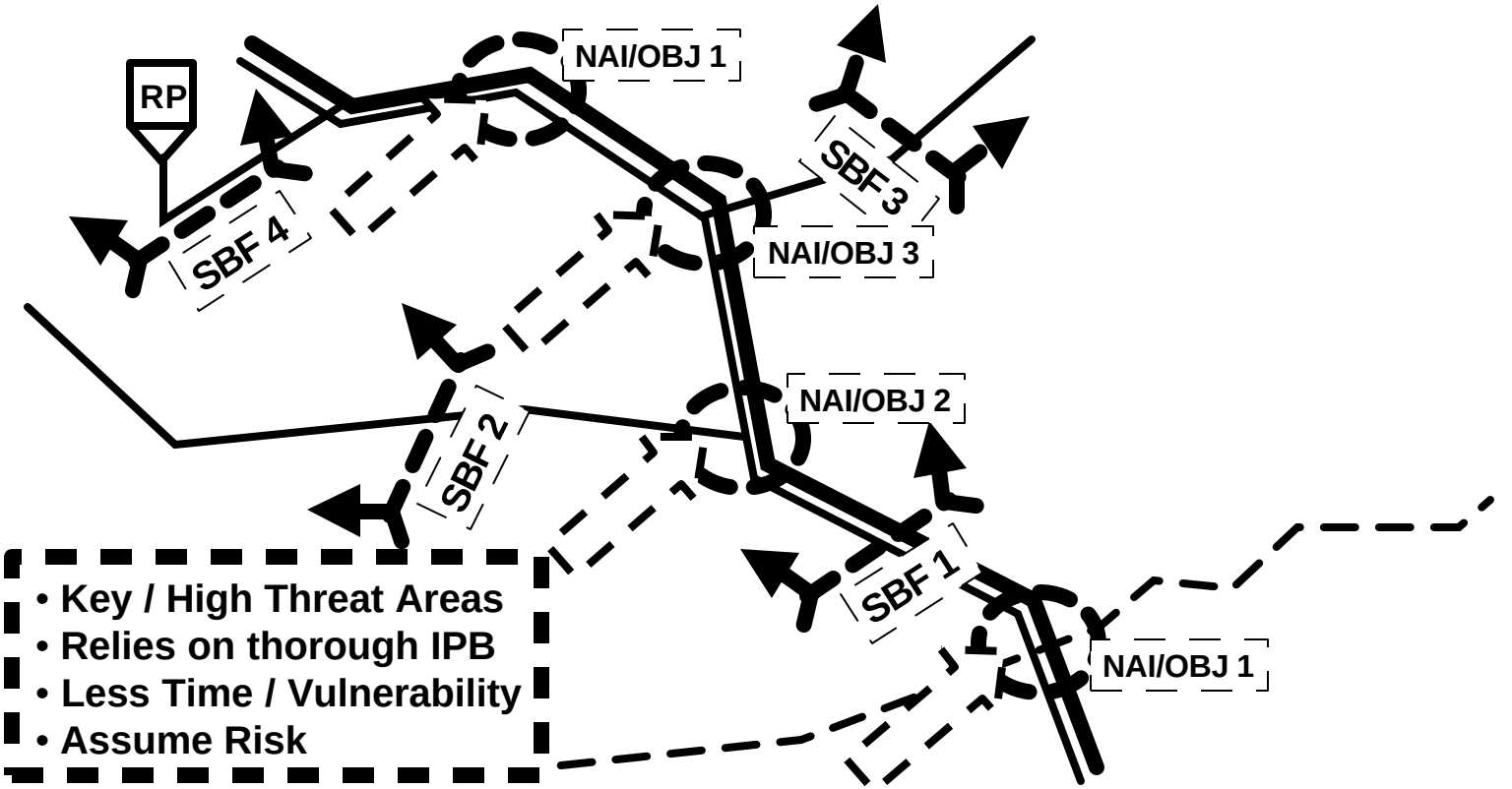

Minefield depth is less than 100 meters
62m
100m


Minefield depth is 100 meters or greater
62 m
38m
62m
1
100m
62m
1
100m
2

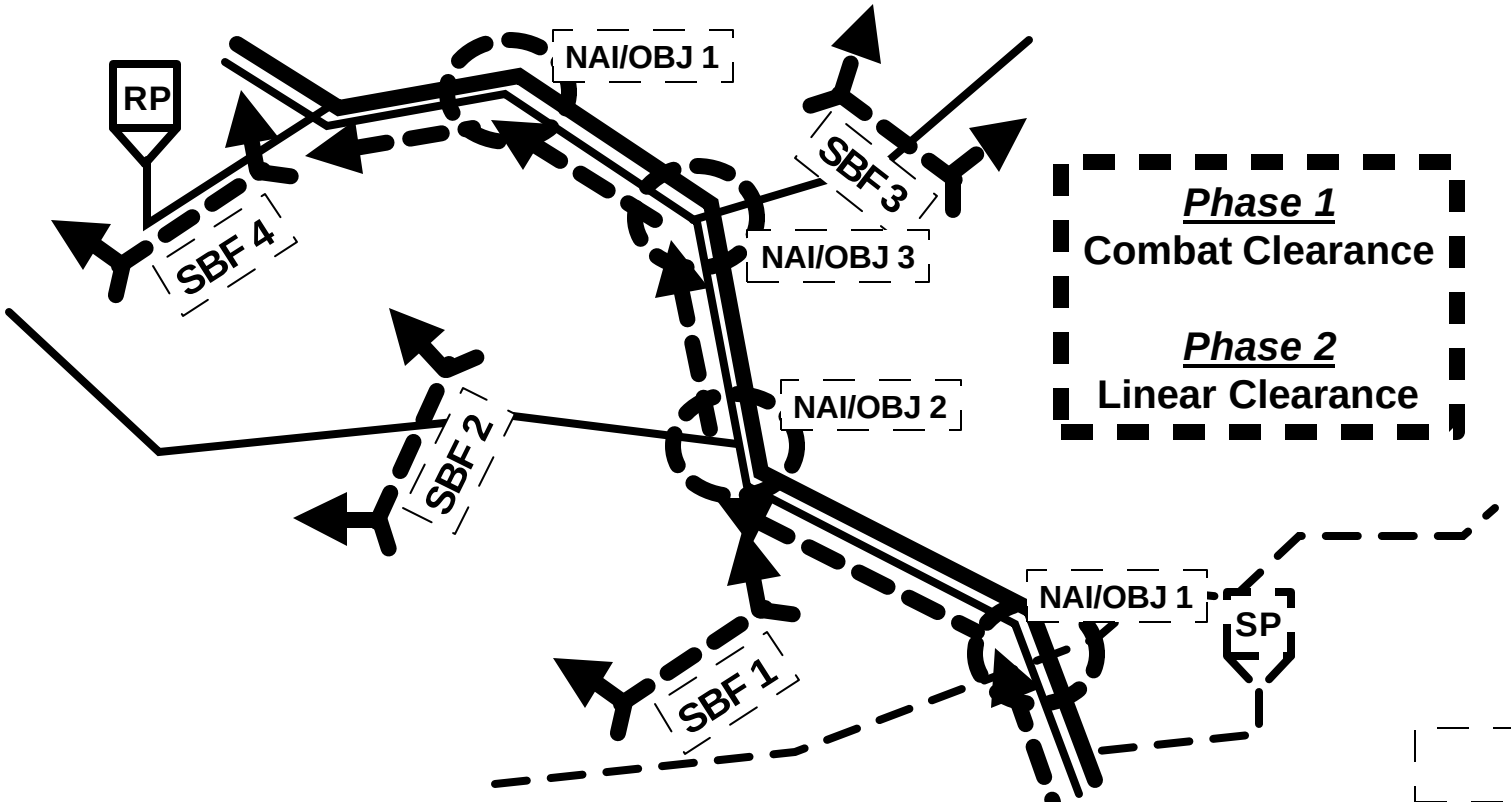
Linear Route Clearance Method



Combat Route Clearance Method



Combined Route Clearance Method



COUNTERMOBILITY / SURVIVABILITY PLANNING CONSIDERATIONS

INTELLIGENCE:

- Analyze enemy AAs / mobility corridors
- Analyze enemy breaching capability
- Nominate PIR and IR for integration into R/S plans

MANEUVER:

- Determine where you want to kill the enemy
- Determine how to attack enemy maneuver to get him where you want him
- Integrate obstacles with the direct fire plan - use TRPs
- Plan labor support, jobsite security, and obstacle turnover
- Use intent, belts and groups to focus effort

FIRE SUPPORT:

- Integrate ALL obstacles with indirect fire
- Plan ADAM/RAAM and establish appropriate triggers

MOBILITY / SURVIVABILITY :

- Establish obstacle and survivability priorities
- Establish priority of EFFORT (what) and SUPPORT (who) for SAPPERS and ENGINEER EQUIPMENT
- Coordinate obstacle siting requirements
- Coordinate lane / gap markings and hand-off
- Plan transition to offense

AIR DEFENSE:

- Cover obstacle work site and material resupply nodes

COMBAT SERVICE SUPPORT:

- Plan task force CL IV.V point and obstacle group mine dumps
- Use combat configured loads (CCLs) for efficient material resupply
- Establish maintenance priority for key engineer equipment

COMMAND AND CONTROL:

- Provide intent for obstacle groups or belts
- Synchronize defensive preparation with clear orders and matrices
- Track and report CMOB and SURV prep status

Coordination with the Engineer

- **Obstacle intent**
- **Time / method for siting obstacle**
- **Obstacle priorities and composition**
- **Obstacle siting and marking**
- **Location / marking / closure of lanes**
- **Mine dump location**
- **Manpower support**
- **Volcano / MOPMS employment plan**

OBSTACLE INTENT

TARGET

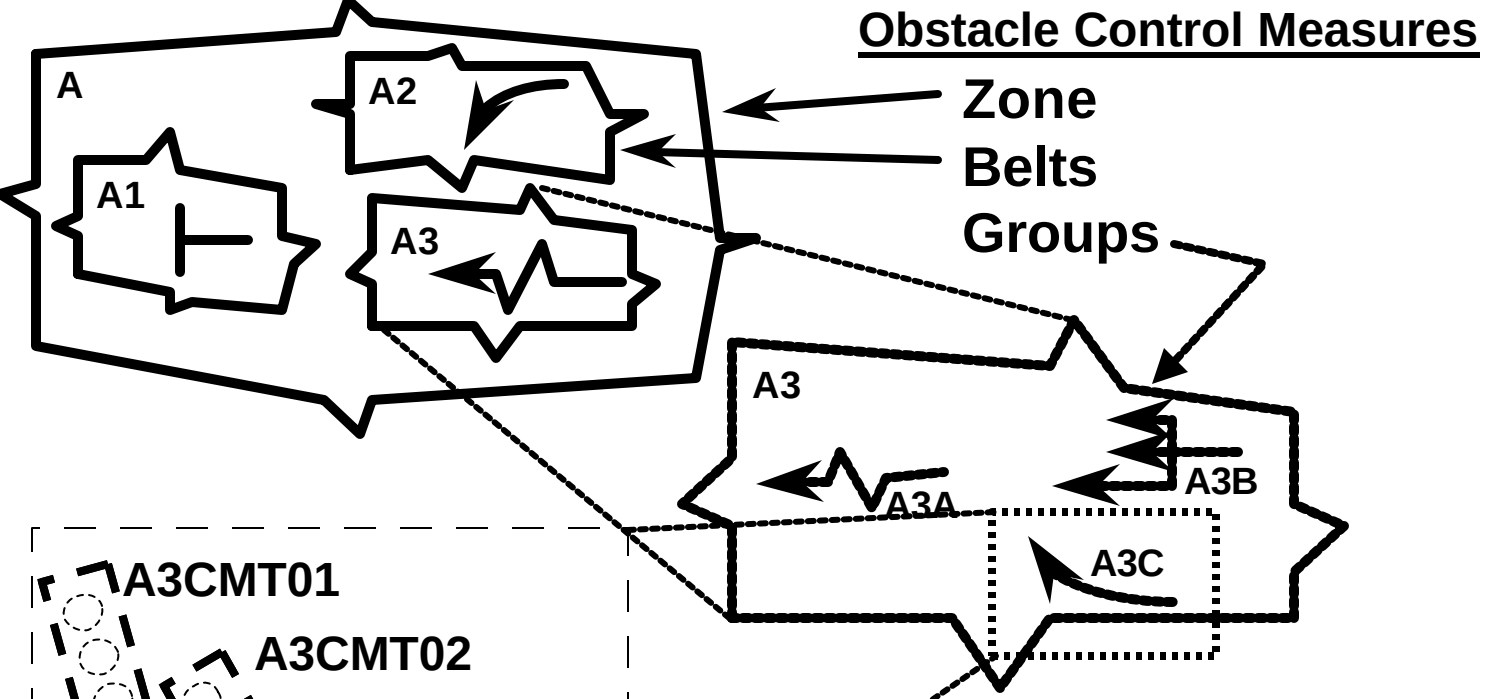
RELATIVE LOCATION

OBSTACLE EFFECT

ENGINEER OPORD BRIEF - DEFENSE

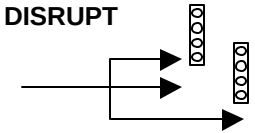
- Enemy Breaching Capabilities
- Engineer Task Organization
- Purpose of Engineer Work
- Priority of Effort (Equip & Sappers)
- Priority of Support/Work (Equip & Sappers)
- FASCAM
- Scheme of Obstacle Overlay
- Current CM Status, Materials, Time & Manpower Constraints
- Mobility Requirements
- Coordinating Instructions:
  - Obstacle Security Plan
  - Survivability Support
- Engineer Timeline
- Unresolved Issues

Obstacle Control Measures

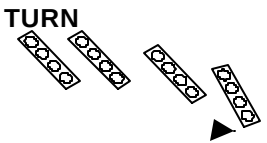


Control Measure	Assigned By	Target	Obstacle Effect	Graphic Symbol
Zone	Division	Division AA 4 – 6 Km	Optional, Not normal	Boundary
Belt	Brigade	Regiment AA 2 – 3 Km	Optional, But normal	Boundary
Group	Battalion	Battalion AA 1 – 1.5 Km	Required	Effect Symbol

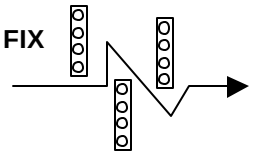
OBSTACLE INTENT GRAPHICS



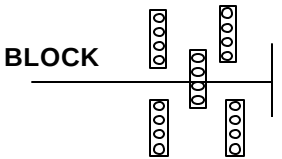
PURPOSE: Break up enemy's formation, interrupt his timing, cause premature commitment of breach assets, piecemeal his attack
FOCUS OF FIRES: Massed indirect fires with obstacles to attack only a portion of the enemy's formation
LOCATION: Forward of EA's



PURPOSE: Force an enemy formation into an avenue of approach or EA
FOCUS OF FIRES: Coerce the enemy by massed fires and orientation of the obstacle. Anchored into no-go terrain or a battle position.
LOCATION: Placed on mobility corridor or avenue of approach.

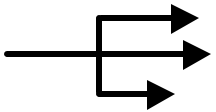


PURPOSE: To slow an attacker within an EA to destroy him using direct and indirect fires.
FOCUS OF FIRES: Obstacles and fires are in depth to complete the enemy's destruction within the specified areas.
LOCATION: Within EA's.



PURPOSE: Stop an attacker 's advance. Closes or denies access to an AA to enemy maneuver
FOCUS OF FIRES: Massed interlocking fires across entire AA. Designed to prevent any attempt to breach across entire front.
LOCATION: Critical points in the battle.

STANDARD MINEFIELD PLANNING FACTORS

STANDARD ROW MINEFIELD	 DISRUPT	 TURN	 FIX	 BLOCK
REQUIRED FRONTAGE	AA x .5	AA x 1.2	AA x 1	AA x 2.4
STANDARD FRONTAGE (M)	250	500	250	500
DEPTH (M)	100	300	120	320
LINEAR DENSITY	.5	1.0	.4	1.1
AT w/TILT ROD (ROWS)	1	4	1	4
AT PRESSURE (ROWS)	2	2	2	2
# of AT w/TILT ROD	42	336	63	378
# of AT PRESSURE	84	168	84	168
ENGR PLT HOURS	1.5	3.5	1.5	5.0

NOTE: All planning is based on the width of the enemy Avenue of Approach (AA)

BACK

OBSTACLE PLANNING FACTORS

OBSTACLE	DIMENSIONS	EFFORT	BILL of MATERIALS (BOM)
ROAD CRATER	12 m WIDE ROAD	1 Sqd HR (2 Hrs w/mines)	1 Roll of DET CORD (M456) 5 40 lbs. SHAPE CHG (M421) 5 40 lbs. CRATER CHG (M039) 60 1lb Blocks of TNT (M032) 1 Box Non-Electric Caps (M131) 1 Box Fuse Igniters (M760) 1 Roll Time Fuse (M670)
TRIPLE STD CONCERTINA	100 m Section	1 Sgd HR	50 Long Pickets 4 Short Pickets 1 Reel Brab Wire 20 Rolls Concertina
NON-STD ROADBLOCK	15 m wide X 11m	1 Sgd HR	30 Long Pickets 22 Short Pickets 4 Reel Brab Wire 11 Rolls Concertina 1 Roll Tie Wire

BACK

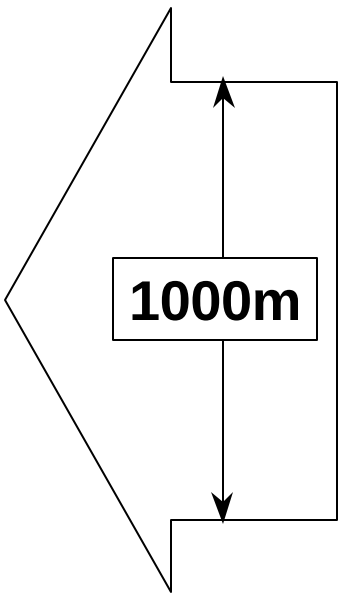
Resourcing an Obstacle Group...

Disrupt

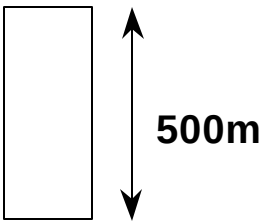
Resource Factor = 0.5

Standard Minefield Frontage = 250 m

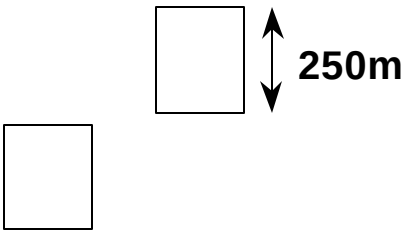
Mobility Corridor



Linear Meters of Obstacle



# of Obstacles and Array



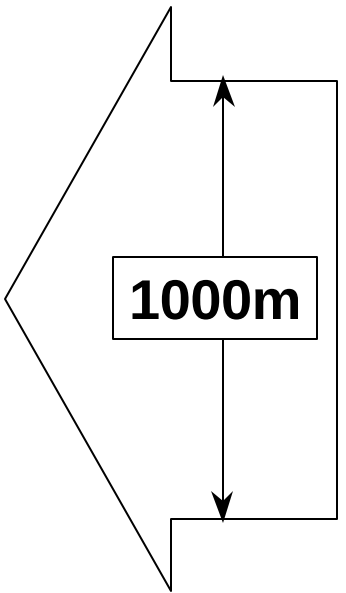
Resourcing an Obstacle Group...

Fix

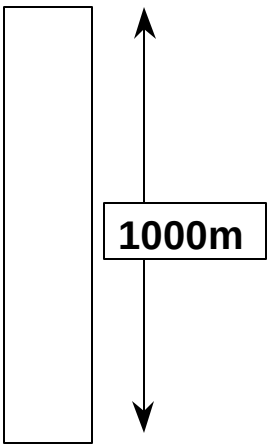
Resource Factor = 1.0

Standard Minefield Frontage = 250 m

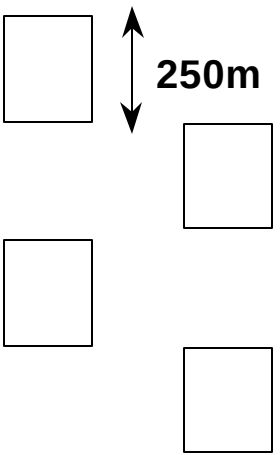
Mobility Corridor



Linear Meters of Obstacle



# of Obstacles and Array



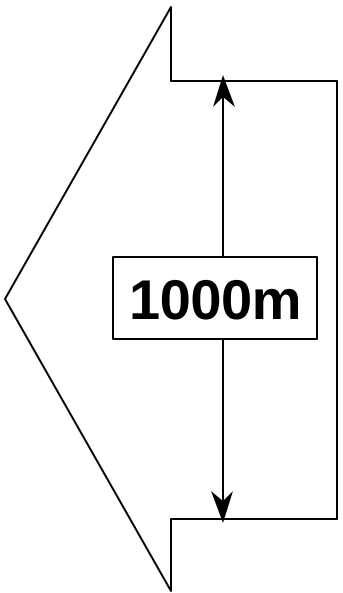
Resourcing an Obstacle Group...

Turn

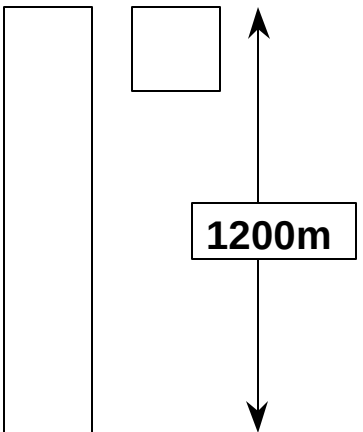
Resource Factor = 1.2

Standard Minefield Frontage = 500 m

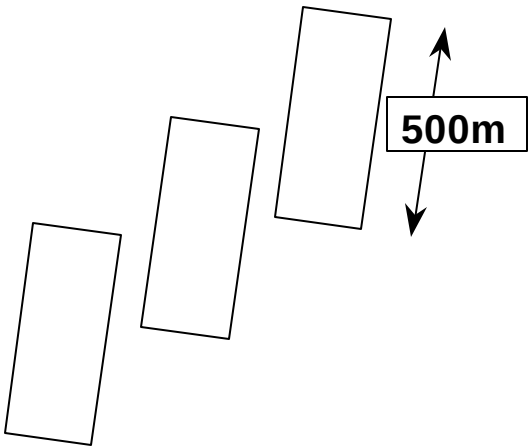
Mobility Corridor



Linear Meters of Obstacle



# of Obstacles and Array



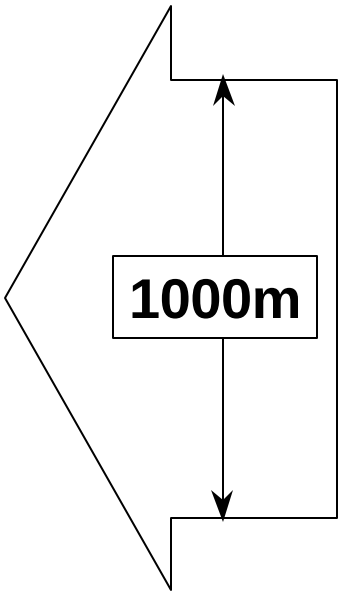
Resourcing an Obstacle Group...

Block

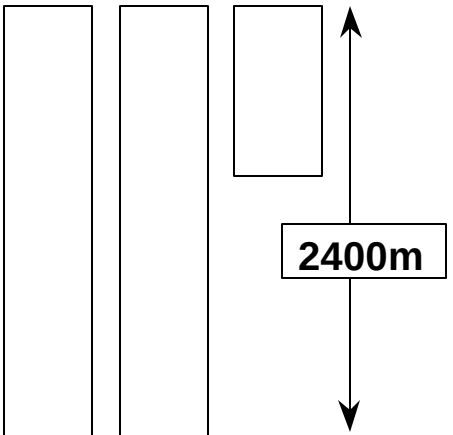
Resource Factor = 2.4

Standard Minefield Frontage = 500 m

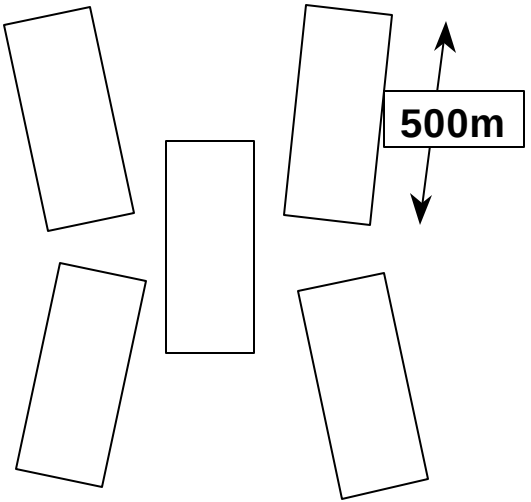
Mobility Corridor

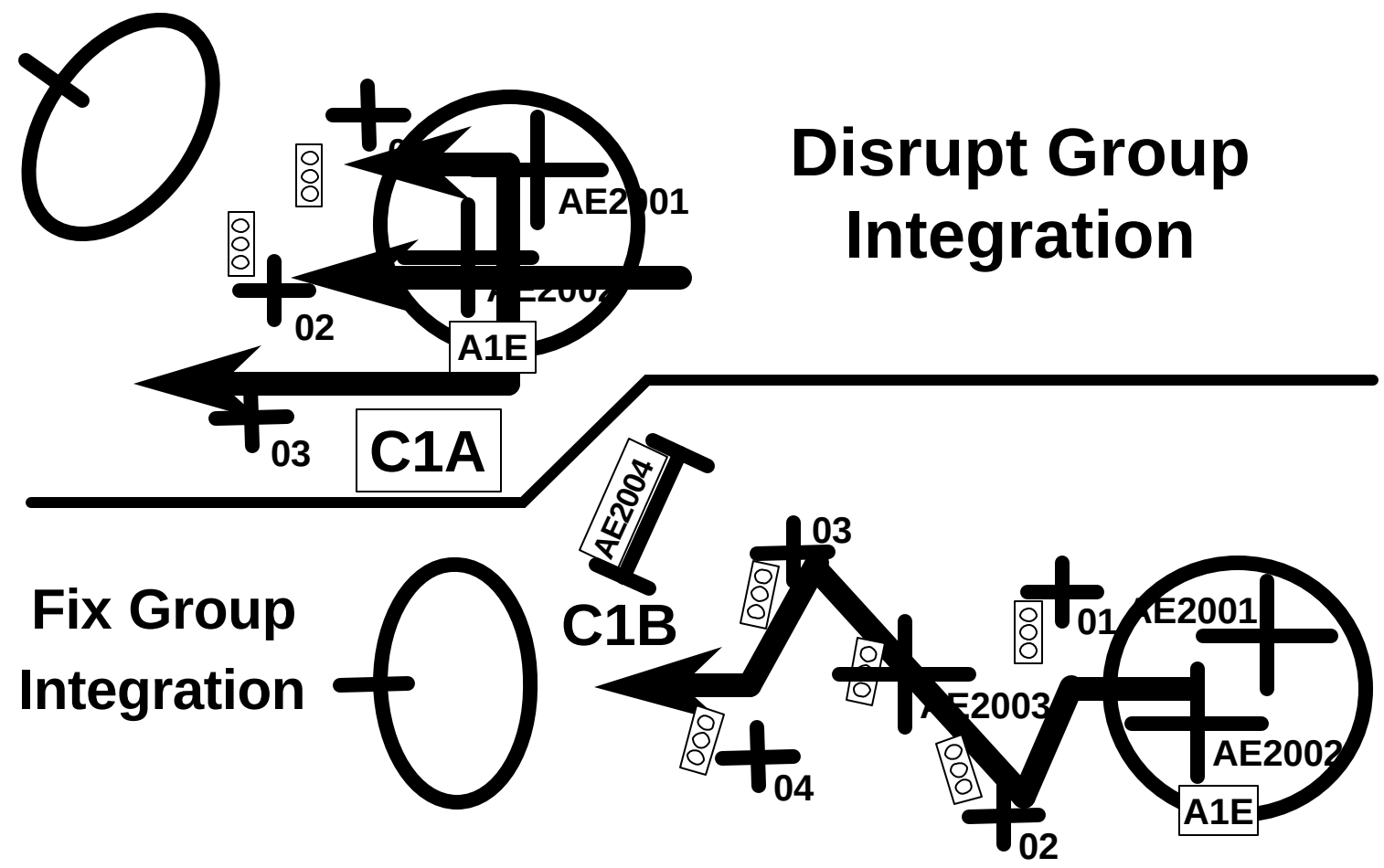


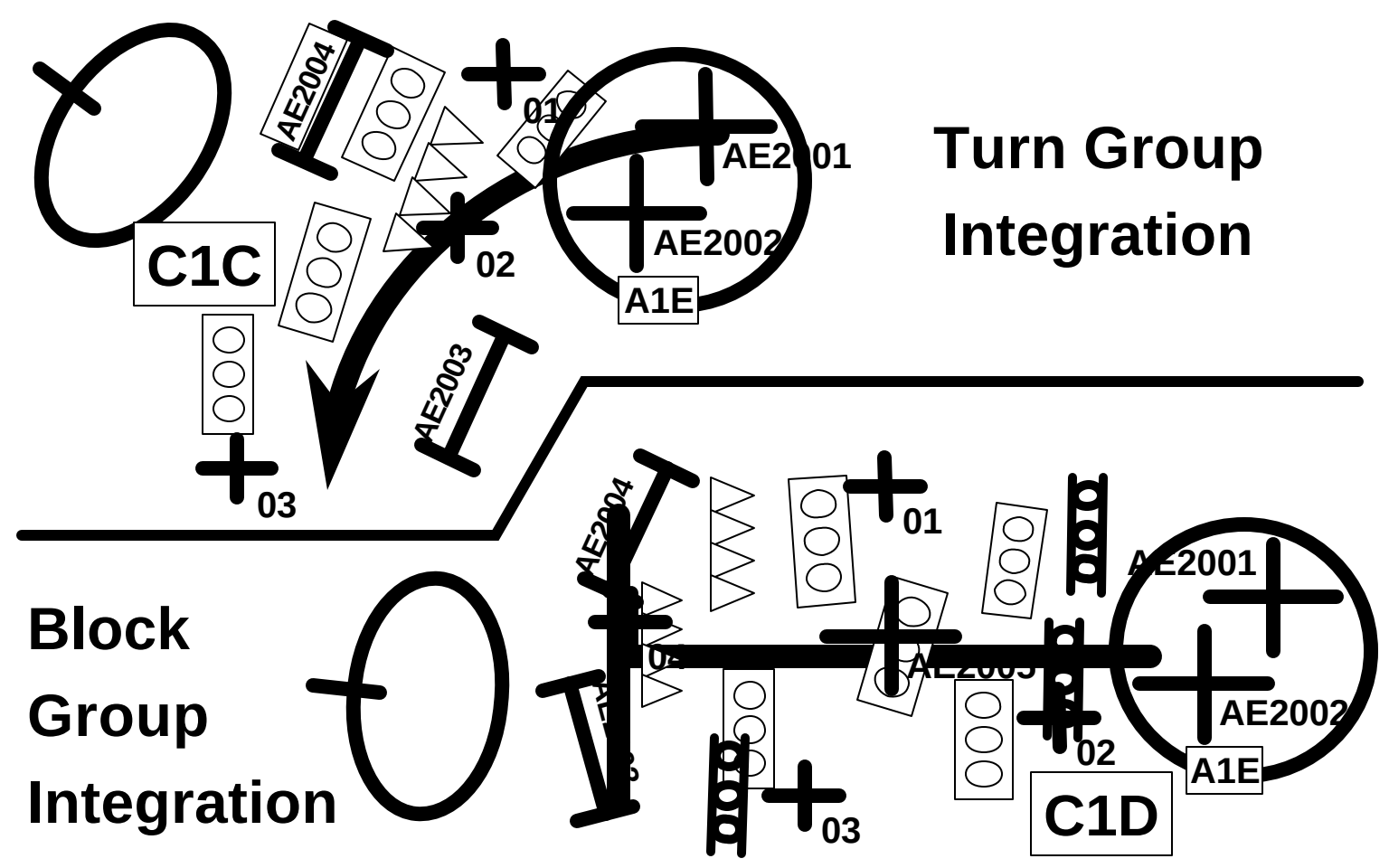
Linear Meters of Obstacle



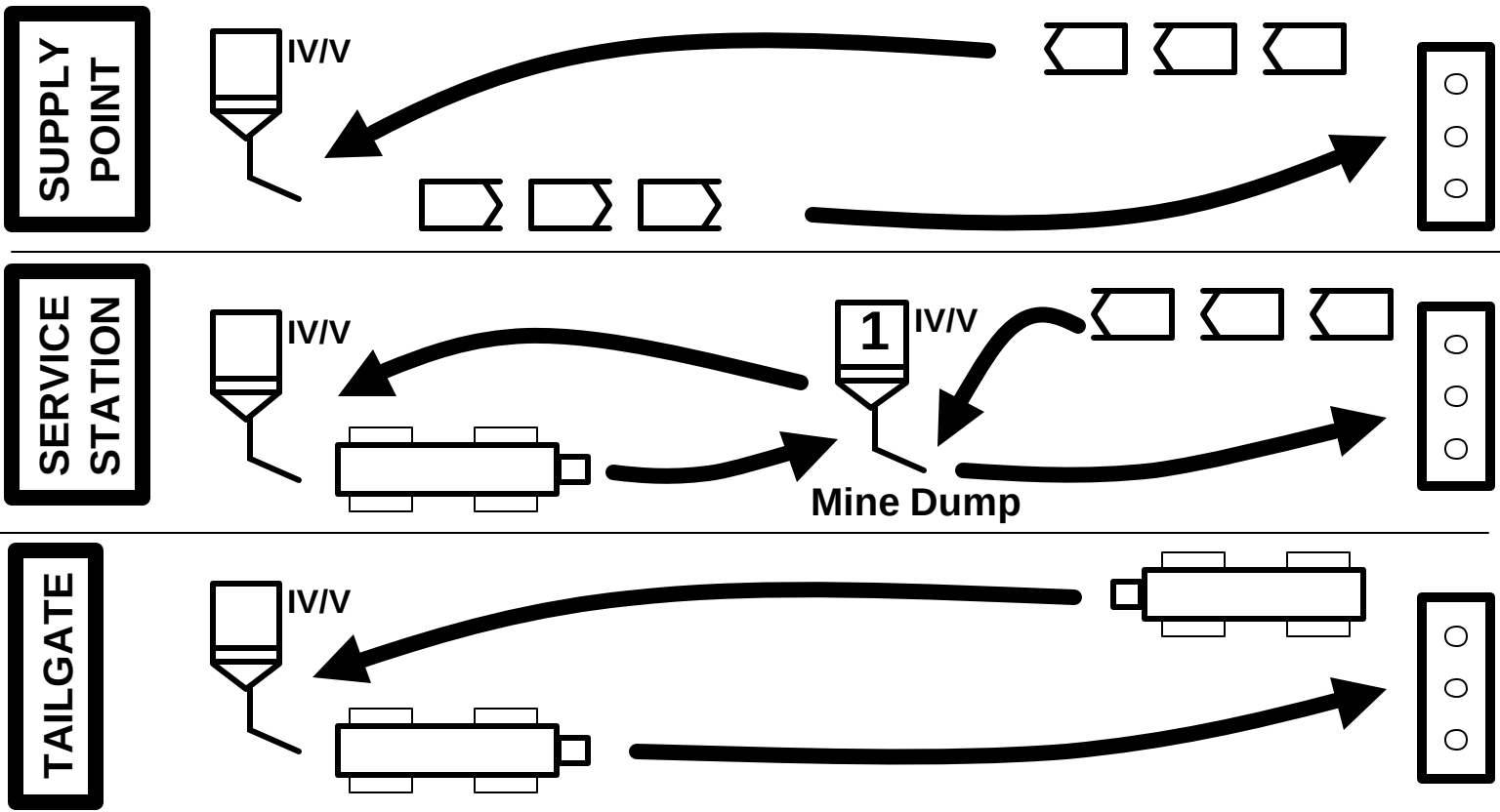
of Obstacles and Array




Disrupt Group Integration
AE2001
02
A1E
03
C1A
AE2004
C1B
03
01
AE2001
AE2003
AE2002
04
02
A1E
Fix Group Integration


Turn Group
Integration
C1C
AE2004
01
AE2001
AE2002
A1E
02
AE2003
03
Block
Group
Integration
AE2004
01
AE2001
AE2002
A1E
02
C1D
03

Resupply Methods



US SCATTERABLE MINEFIELD SYSTEMS

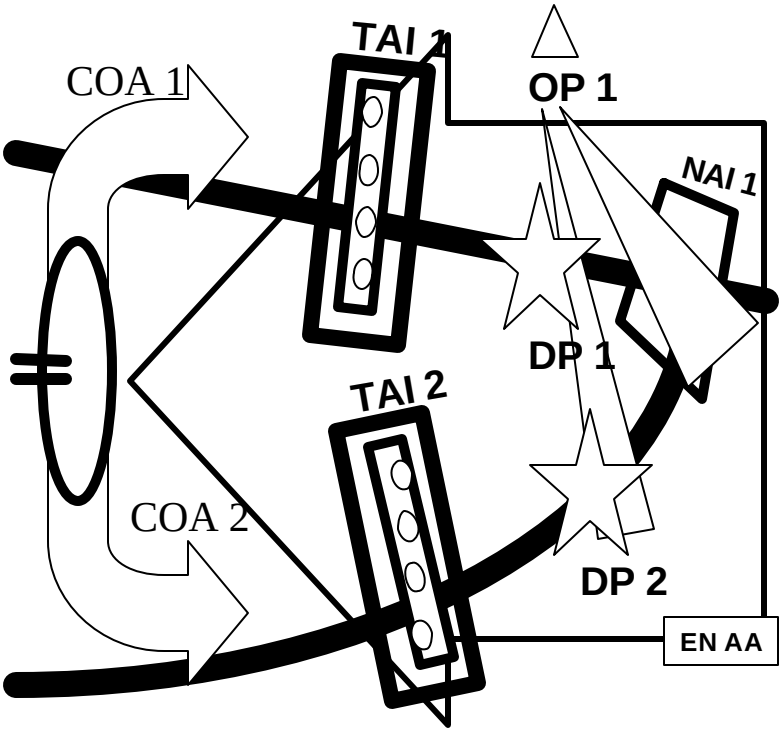
Type	Purpose / Effect	Req'd # Systems	Minefield Size (width x depth in meters)	Minefield Density	Duration	Delivery Method	Emplacement Authority	Emplacement Time
MOPMS	Point Obstacle	1	35m radius (semi-circle)	Low	4 hours, may recycle up to 3 times with M71 RCU.	M71 Remote Control Unit (RCU) or M34 blasting machine with firing wire.	Normally granted to company, team, or base commander.	10 - 15 minutes to setup each unit.
	Disrupt	4	280 x 70	Low				
	Fix	5	280 x 105	Medium				
Volcano	Disrupt / Fix	1	277 x 120	Low to Medium	Short: 4 hours 48 hours Long: 15 days	Ground: Mounted on M548 Tracked Ammo Carrier, Cargo HEMTT, or 5-Ton Truck. Air: Mounted on a UH-60 Blackhawk.	Ground/Short Duration: May be delegated to TF commander. Ground/Long Duration: May be delegated to BDE commander. Air/Any Duration: Normally delegated no lower than the commander with command authority of emplacing aircraft.	10 – 20 minutes depending on minefield size, density and terrain.
	Turn / Block	4	555 x 440	High				
ADAM / RAAM	Disrupt	FSE must calculate aimpoints and rounds required	200 x 200	Low	Short: 4 hours 48 hours Long: 15 days	Field Artillery – Cannon or MLRS.	Short Duration: May be delegated to TF commander. Long Duration: May be delegated to BDE commander.	Minimum of 20 – 30 minutes for a planned, low density minefield. FSE must calculate based on minefield size, density, FA availability and range.
	Fix		200 x 200	Medium				
	Turn		400 x 400	High				
	Block		400 x 400	High				

- *ADAM / RAAM* : **Shape the deep battle, protect flanks, separate enemy echelons**
- *Volcano (Ground / Air)* : **Reinforce / repair conventional obstacles, defeat penetrations, protect flanks, support CATK**
- *MOPMS* : **Close lanes / repair breaches, reinforce conventional minefields**

FASCAM PLANNING

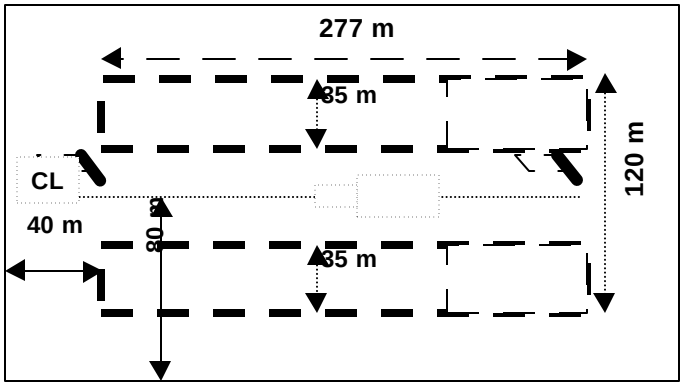
- A product of the *wargame* process !!
- Essential tools include…
  - ✓ **Event Template**
  - ✓ **Decision Support Template**
- Key steps include...
  - ✓ **Identify the requirement**
  - ✓ **Select delivery means / system**
  - ✓ **Establish** *"TRIGGER"* *NAI/DP/TAI*
    - ✶ **Analyze movement and emplacement time**
    - ✶ **Select the best *"EVENT DRIVEN"* trigger**
    - ✶ **Integrate trigger into R/S plan**

TIMING IS EVERYTHING

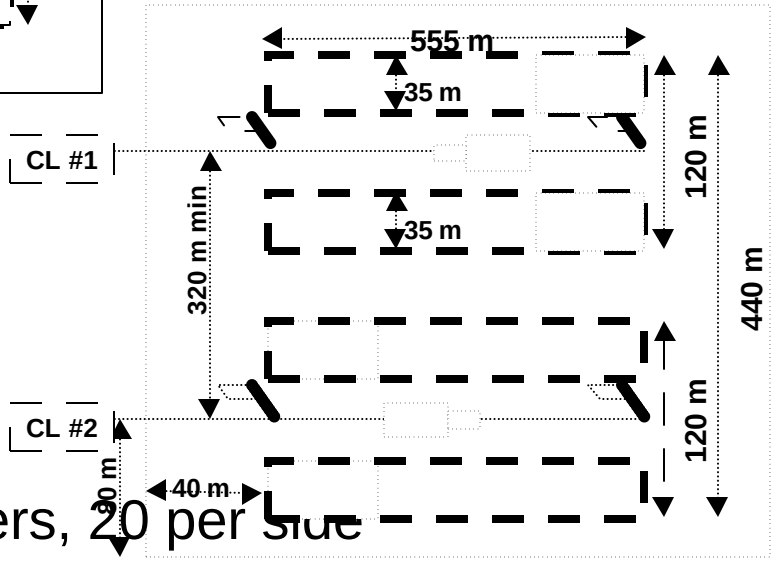


VOLCANO MINEFIELDS

DISRUPT/FIX EFFECT



TURN/BLOCK EFFECT



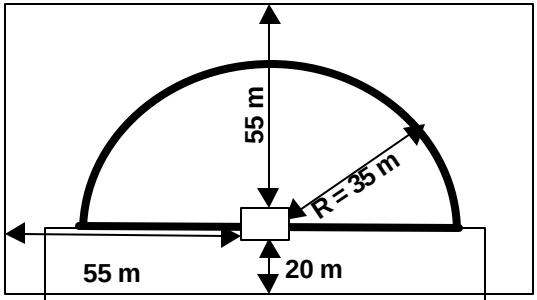
SCATMINWARN

LINE	MESSAGE
A	EMPLACING SYSTEM
B	AT MINES - YES / NO
C	AP MINES - YES / NO
D	# AIM POINTS / CORNER POINTS
E	LOCATION OF AIM / CORNER POINTS and *SIZE OF SAFETY ZONE*
F	DTG OF SELF DESTRUCT TIME

- Total = 40 Canisters, 20 per Side
- 1 VOLCANO load = 4 Disrupt / Fix Minefields
- 1 VOLCANO load = 1 Turn / Block Minefield

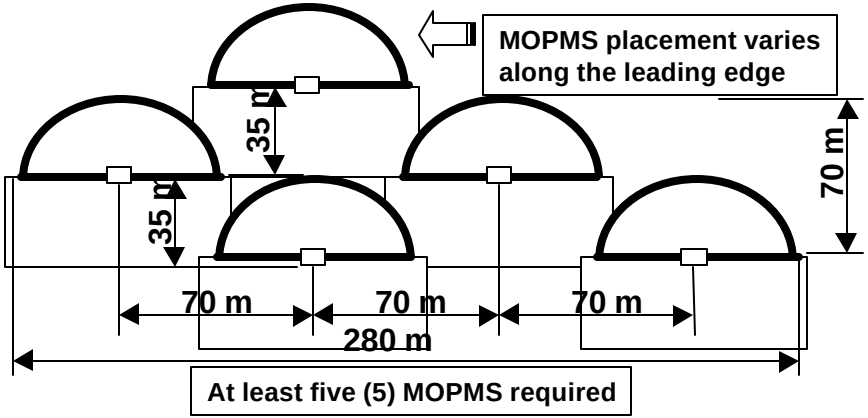
MODULAR PACK MINE SYSTEM

MOPMS

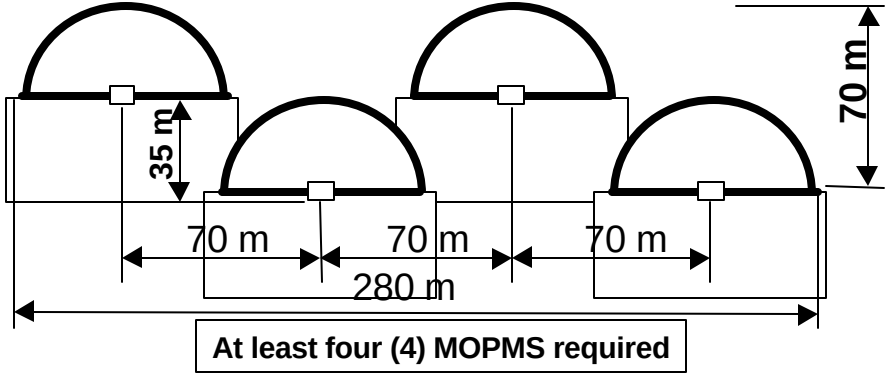


AT Mines = 17
AP Mines = 4

MOPMS FIX MINEFIELD



MOPMS DISRUPT MINEFIELD



OBSTACLE RESOURCING WORKSHEET

Obstacle Group Number	AA/MC Width	Effect / Resource Factor	Linear Meters of Obstacle	Standard Minefield Frontage	Number of Standard Minefields	Mines Required	Platoon Hours Required	BTH Required for ATD
TOTAL RESOURCE REQUIREMENT								

Standard Minefield (MF) Resourcing Factors

Effect	Resource Factor	Frontage (Meters)	# AT Mines FW/TW/**Total**	# Platoon Hours
Disrupt	0.5	250 m	42/84/**126**	1.5
Fix	1.0	250 m	63/84/**147**	1.5
Turn	1.2	500 m	336/168/**504**	3.5
Block	2.4	500 m	378/168/**546**	5.0

Minefield Resourcing Equations

AA/MC Width **x** Resource Factor = **Linear Meters of Obstacle**

Linear Meters of Obstacle / Standard MF Frontage = **# Standard MFs in Group**

Standard MFs **x** AT Mines & PLT HRS = **Resources per MF**

Wire, Explosive, and Constructed Obstacle Planning Factors

300m Triple Standard Concertina Wire Fence	59 Rolls Concertina 4 Rolls Barbed Wire 160 Long Pickets 4 Short Pickets	1.0 to 1.5 Platoon Hours
11-Row Concertina Wire Roadblock	11 Rolls Concertina 3 Rolls Barbed Wire 33 Long Pickets 22 Short Pickets	1 Squad Hour
Hasty Road Crater (Diameter = 8 meters)	5 Shape Charge (15 lbs.) 5 Cratering Charge (40 lbs.) 200' Detonating Cord 50 Blocks TNT (1 lb.)	1.5 Squad Hours
Anti-Tank Ditch (Frontage = 50-70 meters)	1 Blade Team (ACE, Dozer, Combination)	1.0 Blade Team Hour

Notes:

ACE/DOZER SURVIVABILITY RESOURCING WORKSHEET

1. Blade Team Hours (BTH) Required

BP / Unit	Turret Positions	BTH REQ (3.5 BTH/PSN)	Hull Positions	BTH REQ (1.5 BTH/PSN)	Hasty Positions	BTH REQ (1.0 BTH/PSN)	Total Time

TOTAL TIME REQUIRED

2. Blade Team Hours (BTH) Available

# Blade Teams		Effective Hours per Day		# Days		BTH Available
	X	15	X		=	

3. Survivability Positions Available

BTH Available		Work Rates		# Positions	Priority Analysis
	%	3.5 / Turret	=		
	%	1.5 / Hull	=		
	%	1.0 / Hasty	=		

SEE SURVIVABILITY RESOURCING WORKSHEET

1. SEE Hours Required

BP / Unit	Crew-Served	SEE HRS (1.0 / PSN)	2-Man Positions	SEE HRS (0.5 / PSN)	Other Positions	SEE HRS (0.5 / PSN)	Total Time

TOTAL TIME REQUIRED

2. SEE Hours Available

# SEEs		Effective Hours per Day		# Days		SEE HRS Available
	X	15	X		=	

3. Survivability Positions Available

SEE HRS Available		Work Rates		# Positions	Priority Analysis
	%	1.0 / Crew-Served	=		
	%	0.5 / 2-Man	=		
	%	0.5 / Other	=		

OBSTACLE EXECUTION MATRIX

Obstacle Number	Priority	Location	Effect	Emplacing Unit	Owning Unint	Lane Location and Closure	Material Quantity	Material Location	Remarks

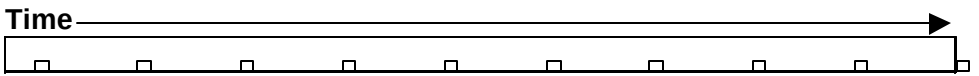
SITUATIONAL OBSTACLE EXECUTION MATRIX

Obstacle Number	Priority	Location	Effect	Trigger / NAI / DP	Observer	Emplacing Unit	Owning UNit	Remarks

SURVIVABILITY MATRIX

BP / Unit	Priority	Location	Number of Positions Allocated	Engineer Assets Assigned	Linkup Time / Location	Dig Start Time	Dig End Time	Remarks

ENGINEER TIMELINE



Sapper Platoons

1st Platoon	1st Squad
	2nd Squad
	3rd Squad
2nd Platoon	1st Squad
	2nd Squad
	3rd Squad

Equipment

A / O Platoon	ACE
	ACE
	ACE
	ACE
	ACE
	ACE
	ACE
	SEE
	SEE
	VOLCANO
	VOLCANO

ENGINEER TIMELINE

TIME

COUNTERMOBILITY	OBSTACLE NUMBER	

TIME

SURVIVABILITY	BP / UNIT	

ANNEX E (Engineer) to OPORD

TASK ORG	CO/TM:	CO/TM:	CO/TM:	CO/TM:	TF CONTROL

1 SITUATION	TERRAIN / WEATHER	ENEMY ENGINEERS	FRIENDLY ENGINEERS
	Condition / Location: Impact:	Assets available: Obstacles:	Higher purpose: Higher priority of effort / support: Attachments / detachments:

2	MISSION	See TF Mission Statement in Base OPORD

3 EXECUTION	SCHEME OF ENGINEER OPERATIONS	
	KEY ENGINEER TASKS (Breach / Emplace / Construct / Dig)	DESCRIPTION OF PLAN TO ACCOMPLISH EACH TASK (Priority / Assets / Engineer Unit / Supported Maneuver Unit / Location)
	Task #1:	
	Task #2:	
	Task #3:	
	Task #4:	
	Task #5:	

TASKS TO MVR AND ENGR SUB-UNITS	COORDINATING INSTRUCTIONS
1)	1)
2)	2)
3)	3)
4)	4)
5)	5)

4 SERVICES SUPPORT	SUPPLY DISTRIBUTION PLAN												
	TF CLASS IV/V POINT LOCATION						RESUPPLY METHOD	Tailgate / Service Station / Supply Point					
	OBSTACLE GROUP	UNIT	MINE DUMP / LOCATION	MINES M21	MINES M19	MINES M15	MOPMS	VOLCANO	CONCERTINA WIRE	PICKETS LONG	PICKETS SHORT	EXPLOSIVES (C-4 / TNT / CRATER / MDI)	MICLIC

COMMAND-REGULATED SUPPLY (CSR)	TRANSPORTATION REQUIREMENTS	HOST NATION SUPPORT

5	COMMAND / SIGNAL	CHANGES TO SOP =

APPENDIX: 1 – Engineer Overlay; 2 – Obstacle Execution Matrix; 3 – Situational Obstacle Execution Matrix; 4 – Survivability Matrix; 5 – Engineer Timeline; 6 – Terrabase Products

ENGINEER ANNEX

ENGINEER PARAGRAPH REQUIREMENTS

1. PURPOSE - General description of what the Engineers will be doing

2. PRIORITY OF EFFORT
- Prioritize by Mobility / Countermobility / Survivability
- May be broken down into "Priority of Equipment Effort" and "Priority of Sapper Effort"

3. PRIORITY OF WORK
- May be broken down into "Priority of Equipment Work" and "Priority of Sapper Work"
- Prioritize by Units, BPs, Weapons or Time

4. SCATTERABLE MINE GUIDANCE
- Purpose
- Delegation of Authority
- Duration (Long vs. Short)
- Restrictions

5. OBSTACLE RESTRICTIONS - Counterattack Routes, Reserve Obstacle. Authority

TASKS TO SUB-UNITS and ***COORDINATING INSTRUCTIONS* Considerations:**

MARKING BREACHES/LANES	TARGET TURNOVER
LANE CLOSURE	OBSTACLES SECURITY
BLADE ASSETS CONTROL	LABOR SUPPORT TO ENGRs
POSITIONING BARRIER MATERIAL	ALLOCATION OF EQUIPMENT

RESULTS OF NBC MISSION ANALYSIS

NBC Output - General
- NBC training status (2 levels down)
- Chemical Defense Equipment (CDE) status (2 levels down)
- OPCON/Attached chemical unit status/capabilities
- Enemy NBC capabilities / NBC COA
- Conduct MOPP analysis / recommend MOPP level
- Operational Exposure Guidance (OEG) analysis
- NBC vulnerability analysis for FF
- NBC NAI's
- NBC trigger points (when EF will use NBC weapons)

NBC Output - Decon
- Operational decon site location(s)
- Water resupply (quantity, location, means)
- Individual Protection Equipment (IPE) / CDE resupply
- Coordinate for decon support (ie engineer, MP)

NBC Output - Smoke
- Assets available/capabilities (smoke plt, smoke grenade, FA, mortars, smoke pots)
- Smoke logistics plan
- Enemy smoke capabilities
- Recommendation for smoke employment

NBC Output - Reconnaissance
- Assets available/capabilities (BCT usually gets 2 FOX)
- What other units best position / capable of NBC recon
  - ✓ Maneuver units/scouts overwatch NBC NAI's
  - ✓ MP's, MSR NBC recon

COMMANDER'S GUIDANCE FOR NBC DEFENSE

Commander's Guidance - General
- Establish MOPP level
- Establish Operational Exposure Guidance (OEG)
- Automatic masking criteria (if change from SOP)
- Will units bypass all contaminated areas, or fight through?
- Who marks contaminated area (ie. Unit encountering it, FOX)?

Commander's Guidance - Decon
- Priorities of decon (by unit & equip type)
- When to decon (during or after the fight)
  - ✓ If Nonpersistent agent, fight dirty (SHOULD dissipate within minutes to hours)
  - ✓ If persistent agent, can fight dirty up to 24 hours then must perform at least operational decon

Commander's Guidance - Smoke
- Area for smoke coverage (size and location)
- Time smoke on target (NOT time to start smoke mission)
- Duration smoke on target (NOT time to stop smoke mission)
- What do you want smoke to do (ie. Cover FF, cover EF, obscure terrain, deception)?

Commander's Guidance - Reconnaissance
- What do you want the FOX to do (priorities of recon)?
  - ✓ Confirm/deny enemy NBC use, overwatch NBC NAI's, monitor MSR's, find clean by-pass routes
- What other assets can be tasked for NBC recon ? (Scouts, maneuver units, engineers, MPs)

BACK

MOPP LEVELS

Level / *Equip*	MOPP Ready	MOPP 0	MOPP 1	MOPP 2	MOPP 3	MOPP 4	Mask Only
Mask	Carried	Carried	Carried	Carried	Worn	Worn	Worn***
BDO	Ready*	Avail **	Worn	Worn	Worn	Worn	
Overboots	Ready*	Avail **	Avail **	Worn	Worn	Worn	
Gloves	Ready*	Avail **	Avail **	Avail **	Avail **	Worn	
Helmet Cover	Ready*	Avail **	Avail **	Worn	Worn	Worn	

*** Items avail to soldier within 2 hours w/replacement avail within 6 hours**

**** Items must be positioned within arm's reach of the soldier**

***** Never "mask only" if nerve or blister agent is used in AO**

NBC PLANNING CONSIDERATIONS

MANEUVER:
- DOES THE TACTICAL PLAN CONSIDER:
- CASUALTIES FROM NBC WEAPONS IF MOPP LEVEL IS NOT RAISED
- CASUALTIES FROM ENEMY FIRES IF MOPP LEVEL IS RAISED
- DEGRADATION ON OPERATIONS:
  - FEWER ENEMY TARGETS DESTROYED
  - ATTACKS TAKE TWICE AS LONG
  - DIRECT FIRE WEAPONS ENGAGE AT SHORTER RANGES
  - RISK OF FRATRICIDE INCREASES
- USE OF SMOKE/OBSCURANTS TO ENHANCE POSITION

FIRE SUPPORT:
- NBC CAPABLE UNITS ARE HIGH PAYOFF TARGETS
- FIRES ARE LESS RESPONSIVE WHEN CREWS ARE IN MOPP 3 OR 4
- CALLS FOR INDIRECT FIRES INCREASE

M/CM/S:
- PLANNED MARCH ROUTES AVOID CONTAMINATION
- SMOKE USED TO PROTECT THE FORCE
- SMOKE USED TO DEFEAT ENEMY RECON, SURVEILLANCE, & TARGET ACQUISITION SYSTEMS
- GUIDANCE ON ACCEPTABLE LEVELS OF RISK:
  - OPERATIONAL EXPOSURE GUIDANCE
  - MOPP ANALYSIS
  - AUTOMATIC MASKING CRITERIA

AIR DEFENSE:
- USE SMOKE TO DENY AIRSPACE
- ENGAGE AIR TARGETS FORWARD

INTELLIGENCE:
- NBC THREAT INDICATED ON SITUATION TEMPLATE
- PIR's INCLUDE CAPABILITY & INTENT:
- ENEMY NUCLEAR DELIVERY SYSTEMS
- ENEMY CHEMICAL DELIVERY SYSTEMS
- ENEMY BIOLOGICAL DELIVERY SYSTEMS
- DOES THE INTELLIGENCE COLLECTION PLAN INCLUDE:
- NBC RECONNAISSANCE
- TEMPLATED AREAS
- NBC ASSUMPTIONS CONCERNING USE:
- DENY/RESTRICT KEY TERRAIN
- CAUSE CASUALTIES IN FORWARD AREAS
- USED AGAINST TRAINS TO CREATE CSS BURDEN

LOGISTICS:
- SUSTAINMENT/SECURITY/SUPPORT TO CHEMICAL CO/PLT
- DECON CONSIDERATIONS:
  - LINK-UP POINTS
  - WATER SOURCES
- REPLACEMENT OF CDE
- TRANSPORTATION ASSETS TO MOVE **CDE**

BATTLE COMMAND:
- PSYCHOLOGICAL DEGRADATION OF MOPP 4:
  - KEEP THE PLAN SIMPLE
  - REHEARSE & SYNCHRONIZE THE PLAN
- PHYSIOLOGICAL DEGRADATION OF MOPP:
  - WORK TO REST PLAN
  - COMMAND DRINKING PLAN

BACK

NBC DEFENSE PLANNING GUIDANCE

NBC RECON FUNDAMENTALS:

Retain Freedom of Movement
Orient on the Threat
Report ALL Information rapidly & accurately
Develop the situation rapidly
Avoid combat with enemy
Maximize NBC recon capability

DECONTAMINATION PRINCIPLES:

Decon as soon as possible
Decon as far forward as possible
Decon only what is necessary
Decon by priority

Level	Technique	Advantages
Immediate	Skin Decon Personal Washdown Operator Spraydown	Prevent Agent from Penetrating
Operational	MOPP Gear Exchange Vehicle Washdown	Temporary relief from MOPP IV Limit agent spread
Thorough	Detailed Equipment Decon Detailed Troop Decon	Long-term MOPP reduction with minimal risk

TENETS OF NBC DEFENSE:

Contamination Avoidance
NBC Protection
NBC Decontamination
Smoke

BATTLEFIELD SMOKE:

Obscuring Smoke
Screening Smoke
Protecting Smoke
Marking Smoke
Supporting Deception

COMMANDERS' NBC PLANNING GUIDANCE

Intent for fighting contaminated
Employment Considerations for NBC Recon
Concept for Smoke Integration
Decontamination Concerns & Priorities
Acceptable Risks associated with NBC Weapons
MOPP Flexibility Guidance

SMOKE SYNCHRONIZATION:

Available assets
Artillery

MISSION ANALYSIS

NBC Threat Status (THREATCON)
MOPP Level
Troop Safety Criteria
NBC Assets available (w/ Command Relationships)
Shortfalls in NBC Assets/Requirements
Shortfalls in NBC Logistics: Fog Oil, Graphite, DS2, STB, Systems (i.e. M8A1 Alarm)
CDE Constraints
FFE Supplies

COA DEVELOPMENT

Fight Dirty or Bypass
NBC Assets support each CoA
Weather/Terrain impacts on Combat Operations
Commanders intent for NBC Ops
Anticipated Changes in MOPP Level
FFE in support of COAs

COA ANALYSIS/WARGAMING

NBC Threat Doctrine & Likely COAs
Enemy NBC Attacks (Templated & NAIs)
Complete NBC Execution/Wargame Matrix
C3I of NBC Assets/Command Relationship)
NBC Recon of NBC NAIs - included in R&S Plan
Automatic Masking Criteria
Vulnerability Analysis
MOPP Analysis
Decon: Priority of Support & Work
Contaminated Casualty Handling
Contaminated Vehicle/Equipment procedures
Clean and Dirt MSRs
Water Resupply/Prepositioning
CDE Requirements for each COA

NBC INTELLIGENCE PREP OF THE BATTLEFIELD

DEFINE THE BATTLEFIELED

NBC Area of Interest
Population & Demographics
Political Factors
Infrastructure
Industrial & Research Facilities
Hospitals
Rules of Engagement

DESCRIBE THE BATTLEFIELD EFFECTS

Terrain & Weather Effects
Weather Predictions for the Operation

EVALUATE THE THREAT

NBC THREATCON
Threat Forces and Capabilities
Delivery Systems, Ranges, and WMD Weapons
Enemy Troops and Equipment (NBC Defense)
Enemy NBC Employment Doctrine

NBC DEFENSE PLANNING GUIDANCE CONT

- **EMP effects**
- **RAD effects**
- **MOPP effects**
- **CM units**
  - **Task organization**
  - **Status**
- **WHNS assets**
- **Weather Info**
- **Plans**
  - **Guidance**
  - **OEG**
  - **CM units employment**
  - **NBC Reporting**

Fire Support

- **CM/NUC**
  - **Indicators**
  - **Target analysis**
  - **Strikwarn**
- **Smoke Operations**
  - **NBC targets**
- **Smoke Mission**
  - **Rounds**
  - **Effects on friendly weapons**

Maneuver

- **Recon NBC marking**
- **Contamination**
  - **ID CM obstacles**
  - **Recon**
  - **Mark**
  - **Clean routes**
- **Concealment with smoke**
- **Deception with smoke**
- **Effects of smoke on friendly maneuver**
- **Effects of smoke on friendly weapons control systems**
- **Decon sites**
  - **Operational/Thorough**

CSS/Logistics

- **Vulnerability**
  - **Analysis**
  - **Protection**
- **Weapons**
- **Resupply operations**

- **-NBC reconnaissance elements observed with conventional reconnaissance elements**
- **Enemy use of meteorology radar's associated with surface-to-surface missiles**

CONDITION: RED
ATTACK IMMINENT
INDICATORS: -Enemy NBC attack in process in AOR outside Corps
-Initiation of attack/counterattack by friendly forces
-Enemy providing NBC warning/signal to his forces
-NBC munitions deliveries observed being made to firing units in range of friendly forces
-Movement of surface-to-surface missile launchers into or within vicinity of a launch site
-Enemy NBC attack in-process in the Corps sector
-Surface-to-surface missile launch reported

TYPES OF DECONTAMINATION

TYPE	BEST START TIME	PERFORMED BY	TECH / EQUIP	GAINS MADE
IMMEDIATE	BEFORE 1 MINUTE	INDIVIDUAL	SKIN DECON	SURVIVAL
	WITHIN 15 MINUTES	INDIVIDUAL OR CREW	PERSONAL WIPE DOWN -/M291/M295 OPERATORS SPRAY DOWN -M11 OR M13 DAP	STOPS AGENT FROM PENETRATING
OPERATIONAL	PRIOR TO 24 HOURS**	UNIT	MOPP GEAR EXCHANGE	-POSSIBLE TEMPORARY RELIEF FROM MOPP 4 -LIMIT AGENT SPREAD
		BN CREW OR DECON SQUAD	VEHICLE WASH DOWN -M12A1 PDDE -M17 LDS	
THOROUGH	WHEN MISSION ALLOWS	UNIT	DETAILED TROOP DECON***	PROBABLE LONG TERM MOPP REDUCTION WITH MINIMAL RISK
		DECON PLT & UNIT AUGMENTEES (17 PERSONNEL)	DETAILED EQUIPMENT DECON**** -M12A1 PDDE -M17 LDS -65 GPM	

* *THE TECHNIQUES BECOME INCREASINGLY LESS EFFECTIVE THE LONGER THEY ARE DELAYED*

** *24 HOURS FOR BDO, UNLESS USED TO DEFEAT PERSONNEL DEGRADATION*

*** *50 MINUTES PER SOLDIER*

**** *NUMBER OF VEHICLES x 10 MINUTES + 90 MINUTES*

BACK

DECONTAMINATION MATRIX

	MOPP GEAR EXCHANGE*	**HASTY DECON BY SQUAD W/O SUPPORT**	**HASTY DECON BY SQUAD W/SUPPORT****
MECH PLT	30 MINUTES	1 HOUR 40 MINUTES	1 HOUR 20 MINUTES
MECH CO	30 MINUTES	5 HOURS	4 HOURS

* *SIMULTANEOUS EXECUTION. DOES NOT INCLUDE TRAVEL TIME TO DECON SITE*

** *SUPPORTED: 1. M17 LDS (SANATOR) BN ASSET*
2. SLICE DECON SQUAD/PLATOON

BACK

SMOKE USAGE

DEFINE SMOKE SUPPORT REQUIREMENTS TO INCLUDE:

- INTENT, LOCATION, & SIZE OF SMOKE TARGET
- TIME/DURATION OF EFFECTIVE SMOKE TO BE ON TARGET
- SECURITY OF SMOKE ASSETS
- IMMEDIATE SUPPORT AVAILABLE FOR MISSION
- PREPARATION OF SMOKE ANNEX FOR OPORD

MEANS OF PRODUCING SMOKE:

PROJECTED SMOKE:

- ARTILLERY: WHITE PHOSPHORUS (WP), RED PHOSPHORUS (RP), HEXACHLOROETHANE (HC)
- MORTARS: WP, & RP

SELF DEFENSE SMOKE:

- SMOKE GRENADE LAUNCHERS AND GRENADES: RP

GENERATED SMOKE:

- SMOKE HAND GRENADES: HC
- SMOKE POTS: HC
- SIGNALING SMOKE: HC & DYES
- SMOKE GENERATORS: FOG OIL - STATIONARY OR MOBILE EMPLOYMENT, GRAPHITE - IR OBSCURATION

BACK

OFFENSIVE SMOKE USE

MISSION:		**PRIMARY:**	**ALTERNATE:**
OBSCURE OBJECTIVE	AS, MS		
CONCEAL BREACHING		SP, SG	AS,MS
CONCEAL MOVEMENT		SP, SG	AS,MS,SHG,GL
BLIND RECON		AS, MS	SHG,GL
HIDE VEHICLE FROM ATGM		GL,	SG
SCREEN BRIDGING OPERATIONS	SP,SG		AS,MS,SHG,GL
SEGREGATE ENEMY		AS,MS	GL
SUPPORT DECEPTION		SP,SG	AS,MS
SILHOUETTE ENEMY		MS	SP,SG,SHG,GL

KEY: ARTILLERY SMOKE (AS), MORTAR SMOKE (MS), SMOKE POTS (SP), SMOKE GENERATORS (SG), SMOKE HAND GRENADES (SHG), GRENADE LAUNCHERS (GL)

BACK

DEFENSIVE SMOKE USE

MISSION:	**PRIMARY:**	**ALTERNATE:**
SILHOUETTE ENEMY	AS,MS,SR	SP
CONCEAL OBSTACLES/EMPLACEMENTS	SP,SG	
CONCEAL MOVEMENT	SP,SG	AS,MS,SHG,GL
BLIND RECON	AS,MS	SHG,GL
HIDE VEHICLES FROM ATGM	GL	SP,SG,SHG
ISOLATE ENEMY AVIATION	AS	MS,SP,SG
SEGREGATE ENEMY	AS,MS	SR
SUPPORT DECEPTION	SG	MS,SP
SCREEN FACILITIES	SG	SP

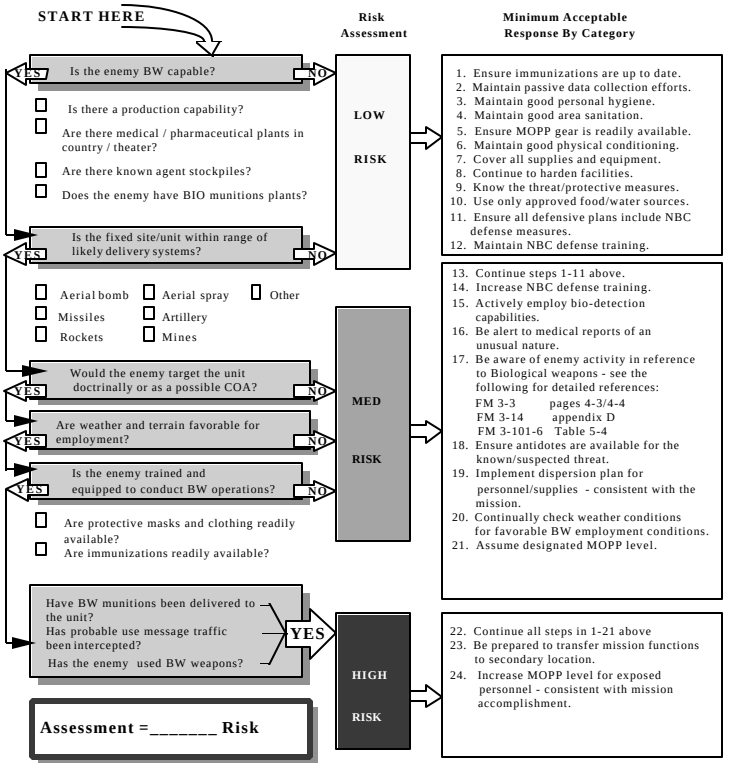
KEY: ARTILLERY SMOKE (AS), MORTAR SMOKE (MS), SMOKE POTS (SP), SMOKE GENERATORS (SG), SMOKE HAND GRENADES (SHG), GRENADE LAUNCHERS (GL)

BACK

NBC RISK ASSESSMENT

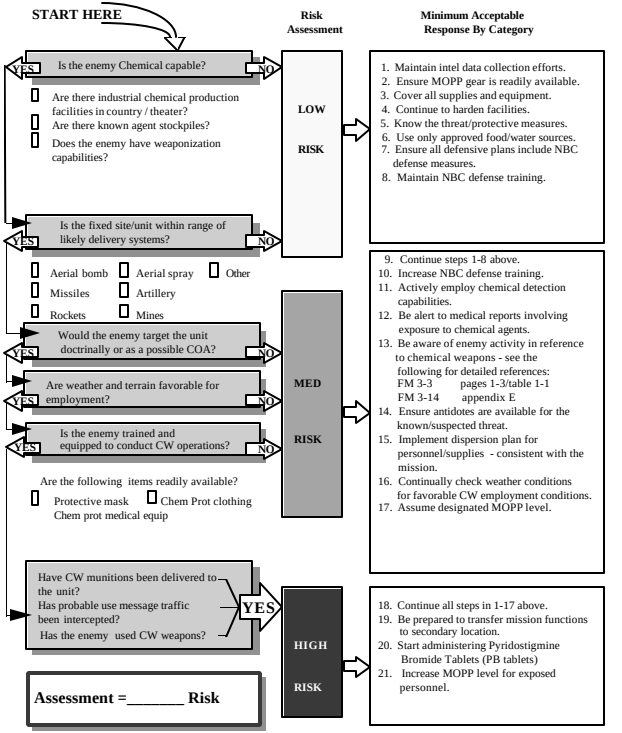
BW RISK ASSESSMENT

Select YES if one or more boxes are checked



CHEMICAL RISK ASSESSMENT

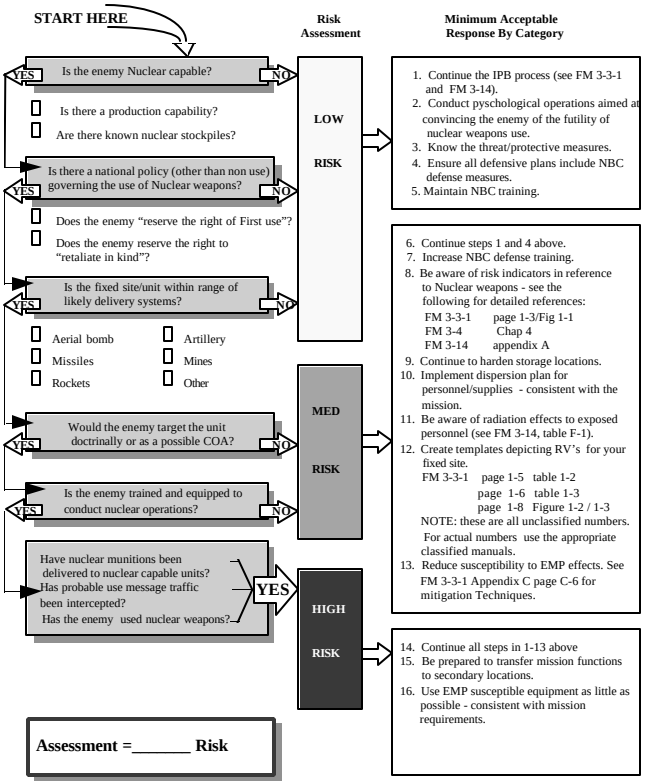
Select YES if one or more boxes are checked



NBC RISK ASSESSMENT (NUCLEAR)

NUCLEAR RISK ASSESSMENT

Select YES if one or more boxes are checked



NBC CASUALTY PROJECTIONS

Sarin (GB) Casualties.

Munitions in Rounds per Hectare ($100m^2$)			Temperature (degrees Celsius)			
MLRS	150-155mm	120-122mm	-12	0	10	20
			Casualty Percentage			
1	2	4	10	16	24	33
2	4	7	14	22	30	40
3	6	10	19	27	37	47
4	8	14	25	34	45	54
4	10	17	31	40	50	60

Based on 15 liter/minute breathing rate (rest or light work) and 9 second masking time.

Thickened Soman (TGD) or VX Casualties.

Munitions in Rounds				Temperature (degrees Celsius)			
Missiles per 1000 ha	Missiles per 150 ha	Bombs per 1000 ha	Bombs per 150 ha	-12	0	10	20
				Casualty Percentage			
6	1	26	4	5	14	20	21
9	2	40	6	8	18	25	25
12	2	54	8	12	24	31	31
15	2	68	10	16	28	36	36
18	3	80	12	19	32	40	41
21	3	94	14	21	35	42	43
24	3	106	16	23	37	44	45

Based on MOPP ZERO. At higher levels, agents are not as effective due to the increased skin protection.

Blister Agent Casualties.

Munitions in Rounds per Hectare ($100m^2$)		Protective Posture	
		MOPP ZERO	MOPP1
150-155mm	120-122mm	Casualty Percentage	
4	7	17	13
7	14	24	18
11	20	34	23
14	27	43	28
18	33	51	32
21	40	57	36

NBC WARNING AND REPORTING SYSTEM

NBC 1 - Observer Report
B - Position of Observer
C - Direction of Attack
D - Date/Time of Start of Attack
E - DTG End of Attack
F- Location of Attack Area
G - Type Attack (arty, mortars, bombs, aircraft spray)/Height of Burst
H - Type of Agent

NBC 4 - Reconnaissance, Monitoring Survey Report
H - Type of Agent/Height of Burst
Q - Location of Sampling/Reading
R - Dose Rate (nuke)
S - Date/Time of reading/contamination detected

Chemical Downwind Message
DTG Report Generated DTG Report Valid
Unit

WM --- --- - - - - -
YM --- --- - -- - - -
XM --- --- - -- - -

Cloud Cover
0 = Sky less than half clouds
1 = Half sky covered
2 = More than half sky covered

Downwind Direction in Degrees

Windspeed in kmph

Air Stability Code
1 = Very Unstable
2 = Unstable
3 = Slightly Unstable
4 = Neutral
5 = Slightly Stable
6 = Stable
7 = Very Stable

Temperature Code

05	5°C
04	4
03	3
02	2
01	1
00	0
51	-1
52	-2
53	-3
54	-4
55	-5

Humidity Code
0 = 0-9%
1 = 10-19%
2 = 20-29%
….
9 = 90-99%

Significant Weather
3 = Blowing Snow/Sand
4 = Fog, ice fog, thick haze
5 = Drizzle
6 = Rain
7 = Light Rain/Snow
8 = Rain, Snow, or Hail Showers
9 = Thunderstorm

LOGISTICS

- CSS MISSION ANALYSIS
- CSS MISSION ANALYSIS
- COMBAT SERVICE SUPPORT CONSIDERATIONS
- HEAVY BRIGADE/LIGHT BATTALION
  CSS CONSIDERATIONS
- LIGHT BRIGADE/HEAVY COMPANY
  CSS CONSIDERATIONS
- LIGHT BATTALION/HEAVY PLATOON
  CSS CONSIDERATIONS
- FORWARD SUPPORT BATTALION ORGANIZATION
- FORWARD SUPPORT BATTALION ORGANIZATION
- CSS EXECUTION MATRIX
- CSS SUPPORT MATRIX

Results of CSS Mission Analysis

1. **CSS Products in terms of**

   a) Fixing- OR rate, maintenance repair timelines, maintenance support team and recovery assets available.

   b) Fueling- Current status (in vehicles and bulk carriers/storage anticipated requirements enroute requirements, refuel assets, systems capabilities, fuel allocations, and significant risks.

   c) Arming- Status of basic and operational load, RSR and CSR, anticipated requirements, ATPs, ASPs, CSAs distribution method, CCLs.

   d) Moving- MSRs, ASRs, transportation requirements, assets, support from non-organic sources.

   e) Manning- Personnel status (based on task organization) and replacement from non-organic sources.

   f) Sustaining- (This category addressed by (1a-1e)

2. **MEDEVAC/Treatment Guidance:**

   a) Casualty Estimate.

   b) Status of organic medical treatment facilities and civilian or host nation facilities, requirements to treat civilian populous, status of Non-Governmental Organizations (NGOs) i.e. Red Cross, Red Crescent, Doctors without borders.

   d) Availability of medical evacuation assets to include air.

Results of CSS Mission Analysis (Cont.)

3. **Classes of Supply:**

   a) Anticipated Requirements- Types of services, i.e. mortuary affairs, laundry and bath, water, personnel service support.

   b) Status of Class I, II, III, IV, V, VII and IX -Quantities and location of all classes of supply at the beginning of the MDMP

   c) Class IX- PLL and ASL levels, critical shortage CCILs.

   d) Controlled Supply Rates- CSR vs RSR, CCLs and their critical impacts.

BACK TO CSS

Commander's Guidance for CSS

1. **CSS priorities in terms of:**
   a) Fixing- Establish priorities by equipment type and unit, repair timelines, specify return to battle, WSRO procedures and preferred distribution plan for class IX.

   b) Fueling- Fuel status must be green at LD, Plan for ROM and hot refuel, identify availability of additional assets.

   c) Arming- Request specific types of ammunition, don't forget attachments, identify prestock arrangements, identify push packages, identify methods of distribution, (pull vs push).

   d) Moving- Prioritize logistical vs tactical, establish back-haul priorities, identify additional assets, specify security of routes.

   e) Manning- Prioritize replacement of "key" individuals/crews, prioritized by unit.

   f) Sustaining- (This category addressed by 1a-1e).

2. **Location of CSS Assets**: Provide guidance when necessitated by METT-T (i.e. I want the Combat Trains 2Kms to the rear of the TF main effort.).

3. **MEDEVAC/Treatment Guidance:**
   a) Ensure Covering Force or reconnaissance elements, attachments, and other units are included in the CHS plan.

      1) Consider using a Forward Logistical Assault Team (FLAT) for treatment/evacuation of recon units.

      2) Plan to use air evacuation assets to extract casualties from recon elements.

   b) Use the array of forces to determine areas of high patient density possible AXP,CCP and treatment facility locations.

Commander's Guidance for CSS (Cont.)

   c) Identify possible decision points for MASCAL scenarios, ensure sufficient class VIII is on hand .

   d) Plan for the use of non-medical platforms to augment and extend organic evacuation capabilities.

   e) Identify/develop patient decontamination contingency plans.

4. **Classes of Supply:**

   a) Anticipated Requirements-Specify critical ammo and barrier/ construction material, CCLs and preferred delivery method, identify the material shortages that will stop the fight.

   b) Prestockage of Class I, II, III, IV, V and VI-Determine what units need and how much.

   c) Class IX- Specify distribution method, by equipment type (i.e. Maneuver vs CS vs CSS) and unit.

   d) Critical Command Item List- Identify those critical items that we routinely run short of i.e. engines, Integrated Thermal Sites, Integrated Ballistic Acquisition Systems, Thermal Site Units, etc…

   e) Controlled Supply Rates-Determine expenditure restrictions by unit as well as Controlled Supply Rates for ammo, barrier/ construction material CCLs and determine their distribution method.

5. **Force Protection-** Identify rear area security roles of units not in contact, use of MPs, emphasize understanding of Rules of Engagement (ROE).

BACK TO CSS

COMBAT SERVICE SUPPORT CONSIDERATIONS

OFFENSE

Supply:

- Increased consumption of Class III and V.
- Use of pre-planned push packages.
- Begin to echelon critical supplies/services forward.
- Be flexible. Use unit distribution if necessary.
- Refuel (ROM) prior to crossing LD.

Maintenance:

- Well defined priority of support.
- Evacuation plan.

Medical :

- High casualty and evacuation requirements.
- Jump aid station. Consider Bn AXPs

Other:

- Planning for adequate communications between tactical and CSS units.

DEFENSE

Supply:

- High class IV and V usage. Cache class V.
- Preposition stocks of essential supplies in defense positions in the forward MBA.
- Plan for increased demand for obstacle/fortification materials. Push forward based on preliminary estimates.
- Plan for increased demand of decontaminants and MOPP gear.
- Resupply during periods of limited visibility.

Maintenance:

- BDAR teams placed well forward.
- MST and unit maint personnel forward.

Medical:

- Well coordinated evacuation plan.

Other:

- Be able to facilitate a rapid transition to the Offense.

BACK TO CSS

HEAVY BRIGADE/LIGHT BATTALION
CSS CONSIDERATIONS

GAINING/LOSING SUPPORT OPERATIONS MUST COORDINATE SUPPORT.

CLASS I

- Mess team from parent battalion.
- 11 personnel and one 5-ton truck w/M149A1.
- Water resupply is critical.

CLASS III

- Supply point distribution in field trains.
- Fuel distribution is 5-gallon cans.
- Support platoon has two 500-gallon blivets.

CLASS V

- Light uses 60MM and 81MM.

MEDICAL

- Evacuation in the light battalion uses 4 HMMWV ambulances.
- FSB should augment with M113 from Med Co at BAS
- AXP's reduce turn around time.

TRANSPORTATION

- Transportation is critical and must be closely managed.
- Must maintain high OR rate on vehicles.
- OPCON trans should be carefully commanded and controlled.

BACK TO CSS

LIGHT BRIGADE/HEAVY COMPANY
CSS CONSIDERATIONS

Heavy forces require more material than light forces.

Close coordination between Hvy Co and BDE 4/FSB is critical for CSS.

Increased consumption of C I, III, V, and IX will require throughput from corps units to FSB.

Heavy company should be prepared to assist in resupply of light units during mobile situations.

Possible Augmentation:	**Provided by:**
Medical Evac Tm (M113)	**Parent Hvy Bn**
Maintenance Tm (Tool Truck, PLL Truck, 2 M88s M113)	**Parent Hvy Bn**
Support Section (2-Cargos, 2-Fuelers and Mess Tm)	**Parent Hvy Bn**
DS Maint Contact Tm (automotive/ armament tm with ASL slice, 5k tanker)	**Parent Hvy Bn**

BACK TO CSS

LIGHT BATTALION/HEAVY PLATOON
CSS CONSIDERATIONS

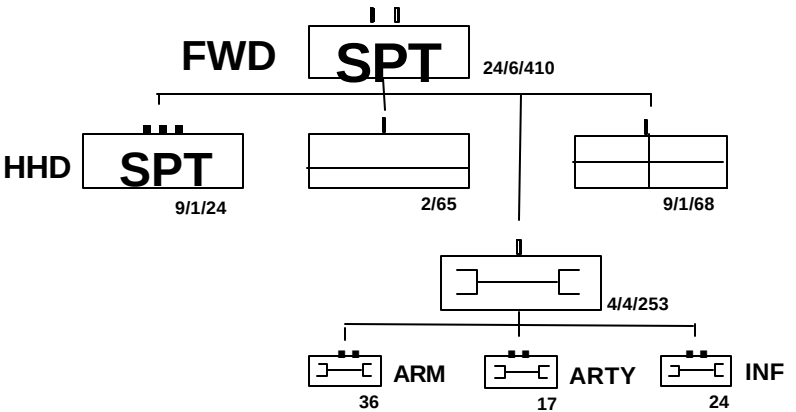
Normally an OPCON relationship.
Close coordination between Hvy Plt and Light Bn S4 is critical for CSS.
Increased consumption of CI III P&B, V and IX will require throughput to Cbt trns .
Heavy platoon must assist in LOGPAC operations in support of itself.
Medical support must be coordinated.

Possible Augmentation:	**Provided by:**
HMMWV for C2	**Parent Hvy Bn/Co**
Maintenance Tm (Tool Truck with parts trl, M88s)	**Parent Hvy Bn/Co**
Ammo Section (1 Cargo HEMTT**)**	**Parent Hvy Bn**
Fuel Section (1 Fuel HEMMT**)**	**Parent Hvy Bn**
Supply Section (5 Ton truck with M149A1)	**Parent Hvy Bn**

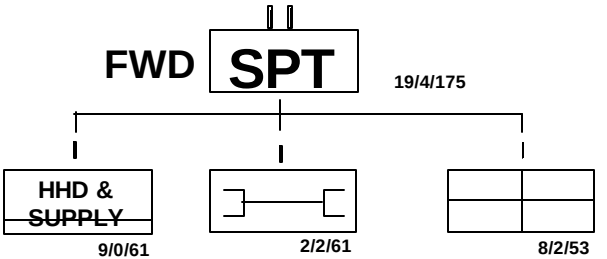
BACK TO CSS

FORWARD SUPPORT BATTALION ORGANIZATION

HEAVY DIVISION



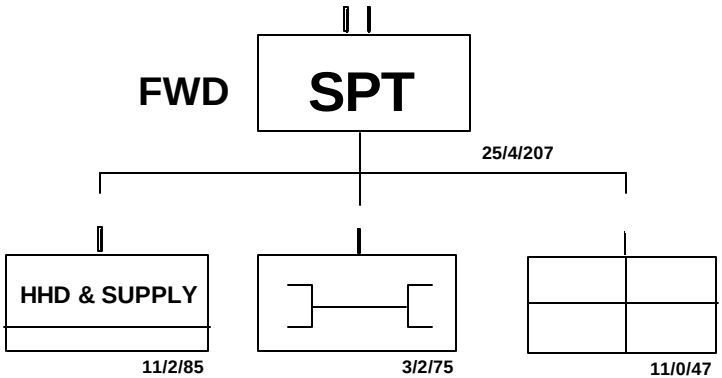
LIGHT DIVISION



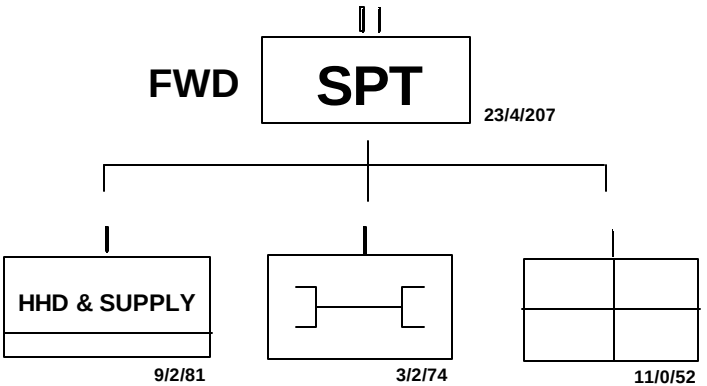
BACK TO CSS

FORWARD SUPPORT BATTALION ORGANIZATION

AIR ASSAULT DIVISION



AIRBORNE DIVISION



BACK TO CSS

CSS EXECUTION MATRIX

LOGPAC SITE **DATE** **RATION CYCLE** **TIME** **WINDOW**

SUPPLY ROUTES

FLD TRNS

EVACUATION ROUTES

CBT TRNS

CSS REHEARSAL

ELEMENT/ EVENT	FAS	MAS	CBT TRNS	AXP	ADJ MED UNIT(GRID)

EMER EVENT	CL I	CL III	CL V	CAS EVAC		AMBULANCE ASSIGNMENT
SCOUTS						H
MORTARS						H
ENGINEER						H
VULCAN						H
STINGERS						H
TOW PLT						H
TOC						C
						C

LOGISTICS CHECKPOINTS

CP	GRID	CP	GRID	CP	GRID

ADJACENT / SUPPORTING MEDICAL UNITS:

UNIT - FREQ. - CALL SIGN

DECONTAMINATION

TEMPLATED AGENT	LINKUP SITE	DECON SITE	DRTY ROUTE

CSS CONCEPT OF SUPPORT :

BACK TO CSS

CSS SUPPORT MATRIX

FRAGO: **TO TF** **OPORD #:** **DTG**

CSS EXECUTION MATRIX

PHASE	FAS	RECOV	CBT TN	MAS	UMCP

CSS SUPPORT MATRIX

UNIT	CL I, III, V	MED EVAC	RECOV
SCOUTS			
MORTARS			
ADA			
ENG			
TOC			

LOGPAC

DATE	RATION CYCLE	LRP	TIME	WINDOW

MEDICAL

AMBUL				
AXP	GRID	TIME	GRID	TIME
ADJ MED				

MSR

NAME	EFFECT TIME

MAINTENANCE PRIORITIES

TRACKS							
WHEELS							
UNITS							

FIELD TRNS

RECOV

DECON

TEMPLATED AGENT	LINKUP SITE	DECON SITE	DIRTY ROUTE

CSS CHECK POINTS

CP	GRID	CP	GRID	CP	GRID

BACK TO CSS

BACK COVER