Tactical Leader Book

This reference covers a broad spectrum of topics helpful to the Army leader. It is not an exhaustive reference, but provides a quick-look format with Army references listed for further reading. It provides a baseline of knowledge, which would be augmented by the leader over time. The book contains GTAs, smart cards, and excerpts from FMs, as well as other information separated by war fighting function.

Overview
- Tactics Overview
- Battlefield Geometry
- Tactical Tasks and Purposes
- Graphics
- Acronym Overview
- Army Doctrine Publications and Field Manuals

IPB Process
- IPB Overview
- Define Battlefield Environments
- Describe Battlefield Effects
- Determine Threat COA
- Evaluate the Threat

ISR / RECON
- ISR Overview
- RECON

Targeting
- Targeting Overview

PLT/CO: TLP
- MDMP / TLP Flow
- OPORD
- PCC / PCI
- Assess
- Training

BN/BCT: MDMP
- MDMP
- WARNO
- Briefing Formats

Operations
- Offensive Operations
- Enabling Operations
- Defensive Operations
- Stability Operations
- COIN

WFF Cards
- Intelligence
- Movement and Maneuver
- Fires
- Engineer
- CBRNE
- Military Police
- ADAM
- EWO
- Sustainment
- Mission Command

Risk
- Composite Risk Management
- Work/Rest and Water Consumption Table
- Sleep Schedule Factors
- Combat Stress Behaviors
- Casualty Evacuation Checklist
- MEDEVAC Process
- 9 Line MEDEVAC

Tactics Overview and Battlefield Geometry

Core Competencies
- Combined arms maneuver
- Wide area security

Enabling Competencies
- Support security cooperation
- Tailor forces for the combatant commander
- Conduct entry operations
- Provide flexible mission command
- Support joint and Army Forces
- Support domestic civil authorities
- Mobilize and integrate the Reserve Components

Offensive Operations	*Defensive Operations*
Primary Tasks: • Movement to contact • Attack • Exploitation • Pursuit	Primary Tasks: • Mobile defense • Area defense • Retrograde
Purposes: • Dislocate, isolate, disrupt, and destroy enemy forces • Seize key terrain • Deprive the enemy of resources • Develop intelligence • Deceive and divert the enemy • Create a secure environment for stability operations	Purposes: • Deter or defeat enemy offensive operations • Gain time • Achieve economy of force • Retain key terrain • Protect the populace, critical assets, and infrastructure • Develop intelligence
Stability Operations	***Civil Support Operations***
Primary Tasks: • Civil security (including security force assistance) • Civil control • Restore essential services • Support to governance • Support to economic and infrastructure development	Primary Tasks: • Provide support for domestic disasters • Provide support for domestic chemical, biological, radiological, nuclear, and high-yield explosives incidents • Provide support for domestic civilian law enforcement agencies • Provide other designated support
Purposes: • Provide a secure environment • Secure land areas • Meet the critical needs of the populace • Gain support for host-nation government • Shape the environment for interagency and host-nation success	Purposes: • Save lives • Restore essential services • Maintain or restore law and order • Protect infrastructure and property • Maintain or restore local government • Shape the environment for interagency success

*Figure 3-2. The elements of full spectrum operations

Unified Land Operations Underlying Logic

Unified Action
Central idea: synchronization, cocrdination, and/or integration of the activities of governmental and non-governmental entities with military operations to achieve unity of effort

Anticipated Operational Environment
- US must project power into region, opposed
- US must seize at least one base of operations (maybe more)
- Threat of WMD will require dispersal of US forces and decentralized operations
- Size of theater (space and population) will exceed US ability to control

To cope with these, we must...

Unified Land Operations
Seize, retain, and exploit the initiative to gain and maintain a position of relative advantage in sustained land operations in order to create the conditions for favorable conflict resolution

Executed through...
Decisive Action
offensive defensive stability DSCA

By means of...
Army Core Competencies
combined arms maneuver wide area security

Guided by...
Mission Command

To do this we must...

Develop operations characterized by flexibility, integration, lethality, adaptability, depth, and synchronization

Cognitively link tactical actions to strategic objectives

Organize effort within a commonly understood construct

Operations Structure

Provide a broad process for conducting operations

Provide basic options for visualizing and describing operations

Provide intellectual organization for common critical tasks

Tenets
Flexibility
Integration
Lethality
Adaptability
Depth
Synchronization

Operational Art
The pursuit of strategic objectives, in whole or in part, through the arrangement of tactical actions in time, space, and purpose

Operations Process
Plan
- Army Design Methodology
- MDMP
- TLP

Prepare
Execute
Assess

Operational Framework
Decisive-Shaping-Sustaining
Deep-Close-Security
Main and Supporting Efforts

Warfighting Functions
Mission Command
Movement and Maneuver
Intelligence
Fires--PAO, EWO, MISO, CA
Sustainment
Protection - ADAM, MP, CBRNE, ENG

DSCA defense support of civil authorities
MDMP military decisionmaking process
TLP troop leading procedures
WMD weapons of mass destruction

Tactics and Common Tactical Concepts

Principles of Joint Operations
- Objective
- Offensive
- Mass
- Maneuver
- Economy of force
- Unity of command
- Security
- Surprise
- Simplicity
- Restraint
- Perseverance
- Legitimacy

Tenets of ULO
- **Flexibility** (employ a versatile mix of capabilities, formations, and equipment)
- **Integration** (incorporate numerous processes and activities)
- **Lethality** (capacity for physical destruction)
- **Adaptability** (accept prudent risk, rapidly adjust)
- **Depth** (time, space, resources, and purpose)
- **Synchronization** (arranging in time and space to mass at the decisive point)

Basic Tactical Concepts
- Area of operations
- Combined arms
- Concept of operations
- Decisive engagement
- Defeat in detail
- Flanks
- Maneuver
- Operation
- Operational frameworks
- Piecemeal commitment
- Reconstitution
- Reserve
- Rules of engagement
- Tactical mobility
- Uncommitted forces

Principles of War (Old Doctrine)
- **Mass** (overwhelming combat power at decisive place/time)
- **Objective** (clearly defined / decisive / attainable)
- **Unity of Command** (all forces under one CDR)
- **Simplicity** (clear / concise / uncomplicated plan and orders)
- **Economy of Force** (employ combat power effectively)
- **Maneuver** (place enemy in position of disadvantage)
- **Offensive** (seize / retain / exploit in)
- **Security** (force protection)
- **Surprise** (strike enemy at time or place he doesn't expect)

Operational Variables
- Political
- Military
- Economic
- Social
- Information
- Infrastructure
- Physical environment
- Time

Mission Variables
- Mission
- Enemy
- Terrain and
- Weather
- Troops and support available
- Time available
- Civil considerations

Eight forms of contact:
- Visual / Direct / Indirect / Non-hostile (Civilian) / Obstacles / Aircraft / Chemical, Biological, Radiological, Nuclear (CBRN) / Electronic warfare

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The conduct of tactical offensive and defensive tasks most often involves conduct using the visual, direct, and indirect forms.

Elements of decisive action and their subordinate tasks

Offensive tasks
- Movement to contact
  - Search and attack
  - Cordon and search
- Attack
  - Ambush*
  - Counterattack*
  - Demonstration*
  - Spoiling attack*
  - Feint*
  - Raid*
- Exploitation
- Pursuit

Forms of maneuver
- Envelopment
- Flank attack
- Frontal attack
- Infiltration
- Penetration
- Turning movement

Defensive tasks
- Area defense
- Mobile defense
- Retrograde operations
  - Delay
  - Withdrawal
  - Retirement

Forms of the defense
- Defense of a linear obstacle
- Perimeter defense
- Reverse slope defense

Stability tasks
- Civil security
- Civil control
- Restore essential services
- Support to governance
- Support to economic and infrastructure development

Defense support of civil authorities
- Provide support for domestic disasters
- Provide support for domestic chemical, biological, radiological, and nuclear incidents
- Provide support for domestic civilian law enfocement agencies
- Provide other designated support

*Also known as special purpose attacks

Tactical enabling tasks

Reconnaissance operations
- Zone
- Area
- Route
- Recon in force

Security operations
- Screen
- Guard
- Cover
- Area (includes route and convoy)
- Local

Troop movement
- Administrative movement
- Approach march
- Road march

Encirclement operations

Mobility operations
- Breaching operations
- Clearing operations (area and route)
- Gap-crossing operations
- Combat roads and trails
- Forward airfields and landing zones
- Traffic operations

Relief in place

Passage of lines

Tactical mission tasks

Actions by friendly force

Attack-by-fire	Follow and assume
Breach	Follow and support
Bypass	Occupy
Clear	Reduce
Control	Retain
Counterreconnaissance	Secure
Disengage	Seize
Exfiltrate	Support-by-fire

Effects on enemy force

Block	Fix
Canalize	Interdict
Contain	Isolate
Defeat	Neutralize
Destroy	Suppress
Disrupt	Turn

Fundamentals of Offensive
- Surprise
- TEMPO
- Concentration
- Flexibility
- Audacity

Fundamentals of Defense
- RECON
- Disruption
- Massing
- Flexibility
- Security

Fundamentals of urban operations
- Perform inform and influence activities aggressively
- Separate the noncombatants from combatants
- Maintain a close combat capability
- Transition control
- Avoid the attrition approach
- Create a collaborative information environment
- Control the essential
- Understand how Soldiers and civilians react under the pressure of combat in an urban environment
- Minimize collateral damage Restore essential services
- Preserve critical infrastructure

1-33. The operational variables are fundamental to developing a comprehensive understanding of an operational environment. Table 1-1 provides a brief description of each variable.

Table 1-1. Operational variables

Variable	*Description*
Political	Describes the distribution of responsibility and power at all levels of governance—formally constituted authorities, as well as informal or covert political powers
Military	Explores the military and paramilitary capabilities of all relevant actors (enemy, friendly, and neutral) in a given operational environment
Economic	Encompasses individual and group behaviors related to producing, distributing, and consuming resources
Social	Describes the cultural, religious, and ethnic makeup within an operational environment and the beliefs, values, customs, and behaviors of society members
Information	Describes the nature, scope, characteristics, and effects of individuals, organizations, and systems that collect, process, disseminate, or act on information
Infrastructure	Is composed of the basic facilities, services, and installations needed for the functioning of a community or society
Physical environment	Includes the geography and manmade structures, as well as the climate and weather in the area of operations
Time	Describes the timing and duration of activities, events, or conditions within an operational environment, as well as how the timing and duration are perceived by various actors in the operational environment

Table 1-3. Mission variables

Variable	*Description*
Mission	Commanders and staffs view all of the mission variables in terms of their impact on mission accomplishment. The mission is the task, together with the purpose, that clearly indicates the action to be taken and the reason therefore. It is always the first variable commanders consider during decisionmaking. A mission statement contains the "who, what, when, where, and why" of the operation.
Enemy	The second variable to consider is the enemy—dispositions (including organization, strength, location, and tactical mobility), doctrine, equipment, capabilities, vulnerabilities, and probable courses of action.
Terrain and weather	Terrain and weather analysis are inseparable and directly influence each other's impact on military operations. Terrain includes natural features (such as rivers and mountains) and manmade features (such as cities, airfields, and bridges). Commanders analyze terrain using the five military aspects of terrain expressed in the memory aid OAKOC: observation and fields of fire, avenues of approach, key and decisive terrain, obstacles, cover and concealment. The military aspects of weather include visibility, wind, precipitation, cloud cover, temperature, humidity.
Troops and support available	This variable includes the number, type, capabilities, and condition of available friendly troops and support. These include supplies, services, and support available from joint, host nation and unified action partners. They also include support from civilians and contractors employed by military organizations, such as the Defense Logistics Agency and the Army Materiel Command.
Time available	Commanders assess the time available for planning, preparing, and executing tasks and operations. This includes the time required to assemble, deploy, and maneuver units in relationship to the enemy and conditions.
Civil considerations	***Civil considerations* are the influence of manmade infrastructure, civilian institutions, and activities of the civilian leaders, populations, and organizations within an area of operations on the conduct of military operations.** Civil considerations comprise six characteristics, expressed in the memory aid ASCOPE: areas, structures, capabilities, organizations, people, and events.

1-34. Each of the eight operational variables also has associated subvariables. Table 1-2 lists examples of subvariables that might require consideration within each operational variable.

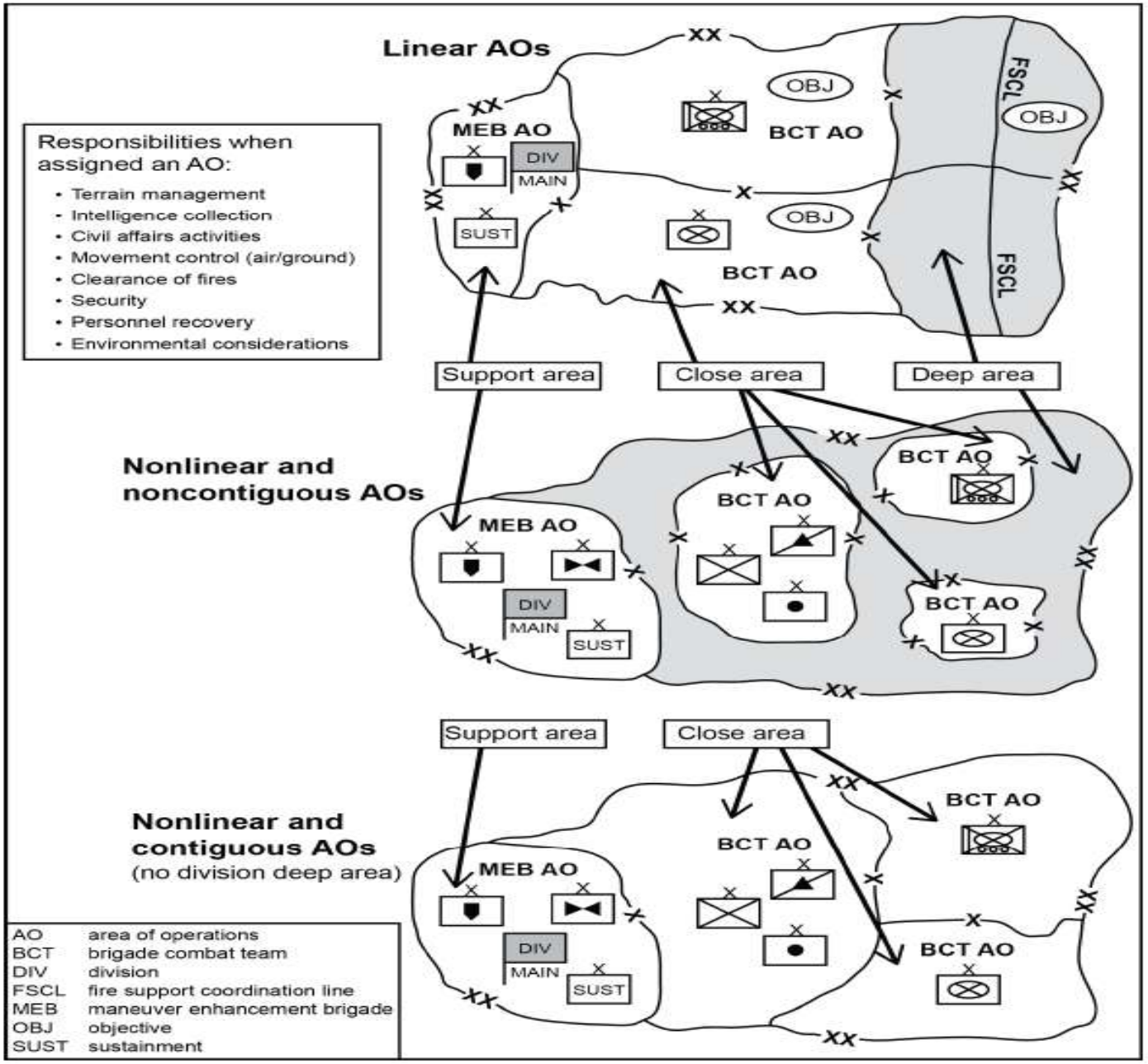
Table 1-2. Operational subvariables

Political variable	*Social variable*	*Physical environment variable*
Attitude toward the United States Centers of political power Type of government Government effectiveness and legitimacy Influential political groups International relationships	Demographic mix Social volatility Education level Ethnic diversity Religious diversity Population movement Common languages Criminal activity Human rights Centers of social power Basic cultural norms and values	Terrain • Observation and fields of fire • Avenues of approach • Key terrain • Obstacles • Cover and concealment • Landforms • Vegetation • Terrain complexity • Mobility classification Natural Hazards Climate Weather • Precipitation • High temperature-heat index • Low temperature-wind chill index • Wind • Visibility • Cloud cover • Relative humidity
Military variable	***Information variable***	
Military forces Government paramilitary forces Nonstate paramilitary forces Unarmed combatants Nonmilitary armed combatants Military functions • Command and control (mission command) • Maneuver • Information warfare • Reconnaissance, intelligence, surveillance, and target acquisition • Fire support • Protection • Logistics	Public communications media Information warfare • Electronic warfare • Computer warfare • Information attack • Deception • Physical destruction • Protection and security measures • Perception management Intelligence Information management	
Economic variable	***Infrastructure variable***	***Time variable***
Economic diversity Employment status Economic activity Illegal economic activity Banking and finance	Construction pattern Urban zones Urbanized building density Utilities present Utility level Transportation architecture	Cultural perception of time Information offset Tactical exploitation of time Key dates, time periods, or events

DESIGNATED LETTERS FOR DATES AND TIMES

Term	*Definition*
C-day	The unnamed day on which a deployment operation commences or is to commence. The deployment may be movement of troops, cargo, weapon systems, or a combination of these elements using any or all types of transport. The letter "C" will be the only one used to denote the above. The highest command or headquarters responsible for coordinating the planning will specify the exact meaning of C-day within the aforementioned definition. The command or headquarters directly responsible for the execution of the operation, if other than the one coordinating the planning, will do so in light of the meaning specified by the highest command or headquarters coordinating the planning (JP 1-02).
D-day	The unnamed day on which a particular operation commences or is to commence (JP 3-02).
F-hour	The effective time of announcement by the Secretary of Defense to the Military Departments of a decision to mobilize Reserve units (JP 1-02).
H-hour	The specific hour on D-day at which a particular operation commences (JP 1-02).
H-hour (amphibious operations)	For amphibious operations, the time the first assault elements are scheduled to touch down on the beach, or a landing zone, and in some cases the commencement of countermine breaching operations (JP 3-02).
P-hour (airborne operations)	In airborne assault operations, the specific hour on D-day at which a parachute assault commences with the exit of the first Soldier from an aircraft over a designated drop zone. P-hour may or may not coincide with H-hour (ATTP 5-0.1).
L-hour	The specific hour on C-day at which a deployment operation commences or is to commence (JP 1-02).
L-hour (amphibious operations)	In amphibious operations, the time at which the first helicopter of the helicopter-borne assault wave touches down in the landing zone (JP 3-02).
M-day	The term used to designate the unnamed day on which full mobilization commences or is due to commence (JP 1-02).
N-day	The unnamed day an active duty unit is notified for deployment or redeployment (JP 1-02).
R-day	Redeployment day. The day on which redeployment of major combat, combat support, and combat service support forces begins in an operation (JP 1-02).
S-day	The day the President authorizes Selective Reserve callup (not more than 200,000) (JP 1-02).
T-day	The effective day coincident with Presidential declaration of national emergency and authorization of partial mobilization (not more than 1,000,000 personnel exclusive of the 200,000 callup) (JP 1-02).
W-day	Declared by the President, W-day is associated with an adversary decision to prepare for war (unambiguous strategic warning) (JP 3-02.1).

BATTLE FIELD FRAME WORK: DEEP-CLOSE-SECURITY



COMBINATIONS OF OPERATIONS

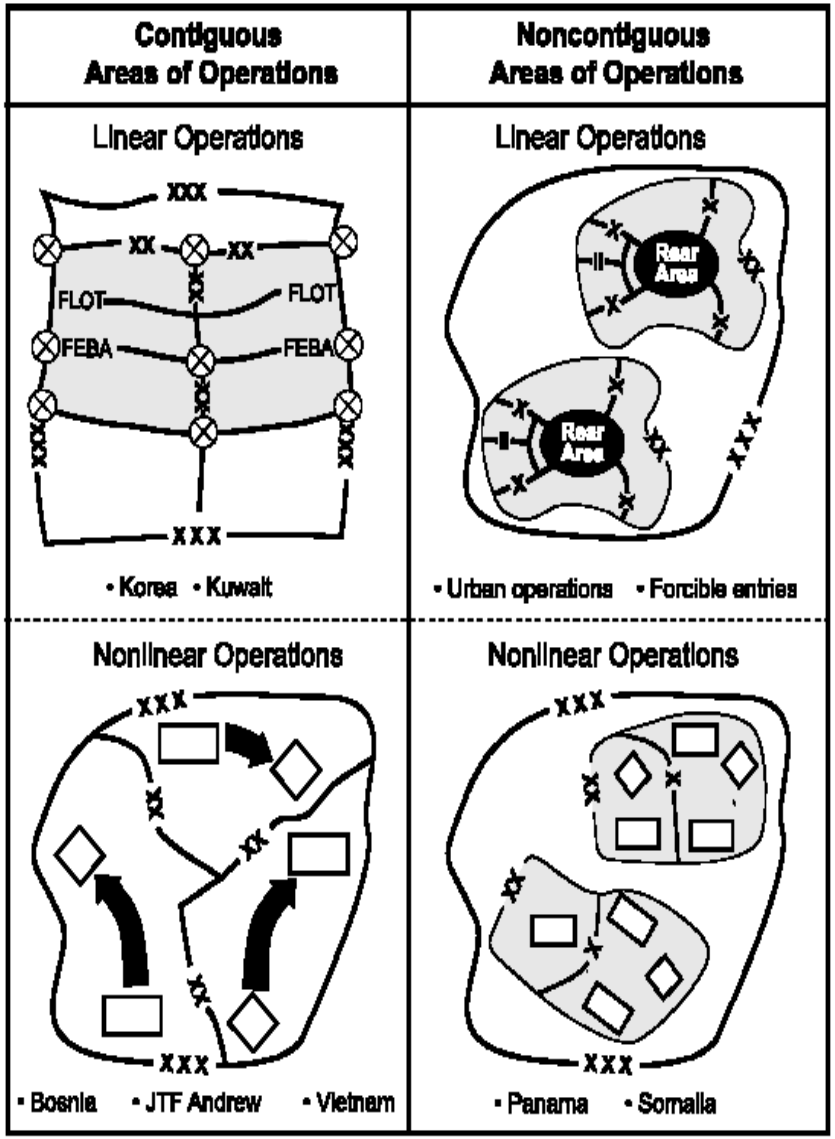


Figure 6-3. Combinations of Contiguous and Noncontiguous Areas of Operations with Linear and Nonlinear Operations

Linear Operations in Contiguous AOs. Linear operations in contiguous AOs (upper left in Figure 6-3) typify sustained offensive and defensive operations against powerful, echeloned, and symmetrically organized forces.

Linear Operations in Noncontiguous AOs. The upper right box depicts a headquarters with subordinate units conducting linear operations in7 noncontiguous AOs. In this case, the higher headquarters retains responsibility for the portion of its AO outside the subordinate unit AOs.

Nonlinear Operations in Contiguous AOs. The lower left box illustrates nonlinear operations being conducted in contiguous AOs. This combination typifies stability operations

Nonlinear Operations in Noncontiguous AOs. The lower right box depicts units conducting nonlinear operations in noncontiguous AOs. The operations of both higher and subordinate units are nonlinear.

5-3. ORGANIZATION OF OFFENSIVE OPERATIONS

Commanders organize forces according to purpose by determining whether each unit's operation will be decisive, shaping, or sustaining. The purpose-based framework centers on decisive, shaping, and sustaining operations. Purpose unifies all elements of the battlefield organization by providing the common focus for all actions. However, forces act in time and space to accomplish a purpose. These decisions form the basis of the concept of operations. Alternatively, commanders may choose to use the 'decisive point,' 'main effort,' or supporting efforts' method to articulate his organization of forces if this better facilitates the commanders ability to visualize, describe, and direct actions, especially since battalion task forces operate at the tactical level of war. Commanders also synchronize operations in time and space. When circumstances require a spatial reference between friendly and enemy forces, commanders may describe them in terms of deep, close, and rear areas. These spatial categories are especially useful in combat operations that are generally contiguous, linear, and feature a clearly defined enemy force.

a. **Decisive Operations.** Decisive operations directly achieve the mission and intent of the higher headquarters. Decisive operations conclusively determine the outcome of battles and engagements. There is only one decisive operation for any major operation, battle, or engagement for any given echelon. The decisive operation may include multiple actions conducted simultaneously throughout the depth of the AO. Commanders weigh the decisive operation while economizing on the effort allocated to shaping operations.

b. **Shaping Operations.** Shaping operations create and preserve the conditions for the success of the decisive operation. Shaping operations include lethal and nonlethal activities conducted throughout the AO. They support the decisive operation by affecting the enemy's capabilities and forces or influencing the opposing commander's decisions. Shaping operations use the full range of military power to neutralize or reduce enemy capabilities. They may occur simultaneously with, before, or after initiation of the decisive operation. They may involve any combination of forces and occur throughout the depth of the AO.

c. **Sustaining Operations.** The purpose of sustaining operations is the generation and maintenance of combat power. Sustaining operations are operations at any echelon that enable shaping and decisive operations by providing CSS, rear area and base security; movement control; terrain management; and infrastructure development. Sustaining operations include the following elements:

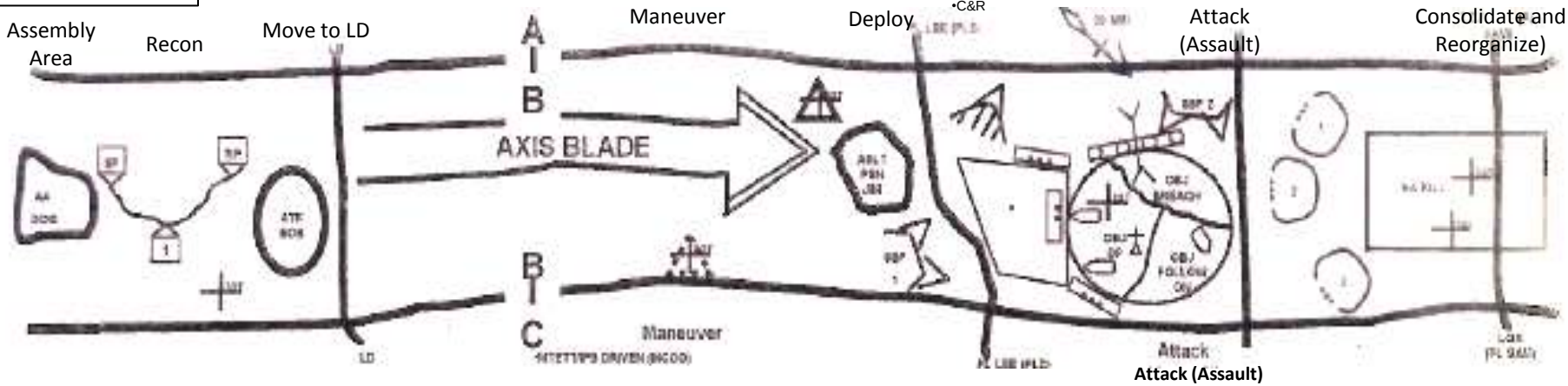
SEQUENCE OF THE ATTACK

Planning

Execution

Sequence of offensive operations:
- Assembly area.
- Reconnaissance.
- Movement to LD
- Maneuver.
- Deployment.
- Assault.
- C&R

The phases of the deliberate ATK:
- Reconnaissance,
- Move to the objective,
- Isolate the objective,
- Seize a foothold
- Exploit the penetration(actions on OBJ)
- C&R



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 Co/BN
- IPD 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
  - Fires Support Plan
  - Control Measures
  - Deception Techniques
  - 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

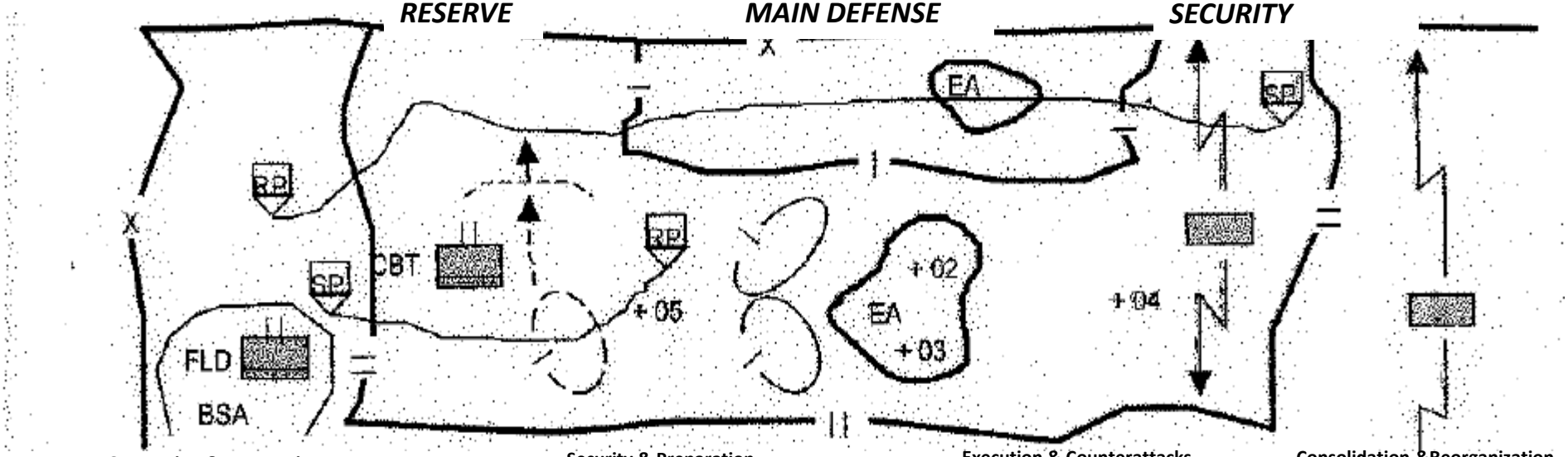
Consolidate and Reorganize
- Exploit Success
- Consolidate
  - Prepare for CATK
- Reorganize
  - Restore C2
  - Build Combat Potential
- Force Protection
  - CSS Integration
  - Position Based on MTETT, Not SOP
  - Fire Support Plan
- Culminating Point Reached?
- Shift M.E. May Be Necessary
- C&R Overlay for Simplicity

DEFENSIVE FRAMEWORK AND SEQUENCE (TYPICAL)

Sequence of the defense:
- RCN, security operations, and EN preparatory fires.
- Occupation.
- Approach of the EN main attack.
- EN assault.
- Counterattack.
- C&R

REAR — **CLOSE** — **DEEP**

RESERVE ***MAIN DEFENSE*** ***SECURITY***



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

Security & Preparation
- Initiate Defensive Preparations
  - -TRP Construction, WPN Positioning
  - -Fighting Position Construction
  - -Obstacle Construction
- Security
  - -R&S Plan
  - -Counter-reconnaissance
  - -Local Security / Deception/Hide Positions
- Complete Defensive Preparations
  - -Finalize Engagement Area
  - -Rehearsals / CSS Preparations
- 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

PRIORITY OF WORK

Leaders must ensure that Soldiers prepare for the defense quickly and efficiently. Work must be done in order of priority.

1. Emplace local security (all leaders).
2. Position and assign sectors of fire for each squad (platoon leader).
3. Position and assign sectors of fire for VEH and medium machine gun teams (platoon leader).
4. Position and assign sectors of fire for M249 MG, grenadiers, and riflemen (squad leaders).
5. Establish command post and wire communications.
6. Designate FPLs and FPFs.
7. Clear fields of fire and prepare range cards.
8. Prepare sector sketches (leaders).
9. Dig fighting positions (stage 1)

PRIORITY OF WORK (cont)

10. Establish communication and coordination with the company and adjacent units.
11. Coordinate with adjacent units. Review sector sketches.
12. Emplace antitank and Claymore mines, then wire and other obstacles.
13. Mark or improve marking for TRPs and other fire control measures.
14. Improve primary fighting positions and add overhead cover (stage 2).
15. Prepare supplementary and then alternate positions (same procedure as the primary position).
16. Establish sleep and rest plans.
17. Distribute and stockpile ammunition, food, and water.
18. Dig trenches to connect positions.
19. Continue to improve positions—construct revetments, replace camouflage, and add to overhead cover.

Task: A clearly defined and measurable activity accomplished by Soldiers and Units. Tasks are specific activities which contribute to the accomplishment of encompassing missions or other requirements.

Purpose: The desired or intended result of the tactical operation stated in terms relating to the enemy or to the desired situation.

Tactical Tasks and Purposes

Ambush – A form of attack by fire or other destructive means from concealed positions on a moving or temporarily halted enemy.

Allow – to forbear or neglect to restrain or prevent

Assault – To make a short, violent, but well-ordered attack against a local objective, such as a gun emplacement, a fort, or a machine gun nest.

Attack – An offensive operation that destroys or defeats enemy forces, seizes and secures terrain, or both.

Attrition (Attrit) – The reduction effeteness of a force caused by the loss of personnel or materiel.

Block – Deny the enemy access to a given area or prevent enemy advance in a given direction. It may be for a specified time. Units may have to retain terrain and accept decisive engagement.

Breach(ing) – The employment of any means to secure a passage through an enemy minefield or fortification.

Breakout – An operation conducted by an encircled force to regain freedom of movement or contact with friendly units. It differs from other attacks only in that a simultaneous defense in other areas of the perimeter must be maintained.

Bypass – A tactical mission task in which the commander directs his unit to maneuver around an obstacle, avoiding combat with an enemy force.

Canalize – To restrict operations to a narrow zone by use of existing or reinforcing obstacles or by direct or indirect fires.

Clear – To destroy or force the withdrawal of all enemy forces and reduction of any obstacles which may interfere with subsequent operations.

Contain – 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.

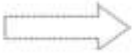
Consolidation and Reorganization – Organizing and strengthening a newly captured position so that it can be used against the enemy.

Control – Authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations.

Cover – Protection from the effects of fires. (FM 6-0) 2. A form of security operation whose primary task is to protect the main body by fighting to gain time while also observing and reporting information and preventing enemy ground observation of and direct fire against the main body. Unlike a screening or guard force, the covering force is a self-contained force capable of operating independently of the main body.

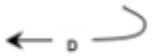
Counter mobility operations – The construction of obstacles and emplacement of minefields to delay, disrupt, and destroy the enemy by reinforcement of the terrain. The primary purpose of counter mobility operations is to slow or divert the enemy, to increase time for target acquisition, and to increase weapon effectiveness.

Counterattack – A form of attack by part or all of a defending force against an enemy attacking force with the general objective of denying the enemy his goal in attacking.



Counter Reconnaissance – A tactical mission task that encompasses all measures taken by a commander to counter enemy reconnaissance and surveillance efforts. Counter reconnaissance is not a distinct mission, but a component of security operations.

Delay – To trade space for time, inflict maximum damage on the enemy force and preserve the force within the limits established by the issuing commander.



Demonstration- A form of attack designed to deceive the enemy as to the location or time of the decisive operation by a display of force. Forces conducting a demonstration do not seek contact with the enemy. 2. In stability operations and support operations, an operation by military forces in sight of an actual or potential adversary to show military capabilities.

Deceive – Those measures designed to mislead the enemy by manipulation, distortion, or falsification of evidence to induce the enemy to react in a manner prejudicial to the enemy's interests.

Decisive Point: Where the unit will mass the effects of overwhelming combat power to achieve a result with respect to terrain, enemy, and time that will accomplish the unit's purpose.

Defeat – A tactical mission task that occurs when an enemy force has temporarily or permanently lost the physical means or the will to fight. The defeated force's commander is unwilling or unable to pursue his adopted course of action, thereby yielding to the friendly commander's will, and can no longer interfere to a significant degree with the actions of friendly forces.

Deny – In information operations, entails withholding information about Army force capabilities and intentions that adversaries need for effective and timely decision making.

Destroy – To physically disable or capture an enemy force.

Disengagement – In arms control, a general term for proposals that would result in the geographic separation of opposing non-indigenous forces without directly affecting indigenous military forces.

Disrupt – A tactical mission task in which a commander integrates direct and indirect fires, terrain, and obstacles to upset an enemy's formation or tempo, interrupt his timetable, or cause his forces to commit prematurely or attack in piecemeal fashion.

Destroy – A tactical mission task that physically renders an enemy force combat-ineffective until it is reconstituted.

Divert – to turn from one course or use to another

Enable – To provide with the means

Envelope – A form of maneuver in which an attacking force seeks to avoid the principal enemy defenses by seizing objectives to the enemy rear to destroy the enemy in his current positions.

Exfiltrate – The removal of personnel or units from areas under enemy control by stealth, deception, surprise, or clandestine means.

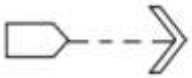
Exploitation – 1. Taking full advantage of success in military operations, following up initial gains, and making permanent the temporary effects already achieved. 2. An offensive operation that usually follows a successful attack and is designed to disorganize the enemy in depth.

Feint- In military deception, an offensive action involving contact with the adversary conducted for the purpose of deceiving the adversary as to the location and/or time of the actual main offensive action

Fix – Actions taken to prevent the enemy from moving any part of his forces from a specific location and/or a specific period of time by holding or surrounding them to prevent their withdrawal for use elsewhere.

Fire Planning – A continuous process, usually top-down driven or initiated, of planning and coordinatin fire support requirements.

Follow and Assume – A tactical mission task in which a second committed force follows a force conducting an offensive operation and is prepared to continue the mission if the lead force is fixed, attrited, or unable to continue.



Follow and Support – A tactical mission task in which a committed force follows and supports a lead force conducting an offensive operation.

Force- An aggregation of military personnel, weapon systems, equipment, and necessary support, or combination thereof.

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.

High Value Target (HVT) – Targets deemed important to the enemy commander for the successful accomplishment of his mission.

High Payoff Target (HPT) – HVTs that must be successfully acquired and attacked to contribute substantially to the success of friendly operations.

Influence – To cause adversaries or others to behave in a manner favorable to Army forces

Intent: A clear, concise statement of what the force must do and the conditions the force must meet to succeed with respect to the enemy, terrain, and desired end state. It provides the link between the mission and concept of operation by stating the key tasks that along with the mission, is the basis for subordinates to exercise initiative when anticipated opportunities arise or when the original concept of operation no longer applies.

Interdict – To prevent or hinder by any means enemy use of any area or route. 

Isolate – A tactical mission task that requires a unit to seal off—both physically and psychologically—a enemy from his sources of support, deny an enemy freedom of movement, and prevent an enemy unit from having contact with other enemy forces.

Link Up – A meeting of friendly ground forces which occurs in a variety of circumstances.

Mobility operations – Obstacle reduction by maneuver and engineer units to reduce or negate the effects of existing or reinforcing obstacles. The objective is to maintain freedom of movement for maneuver units, weapon systems, and critical supplies.

Movement to contact – A form of the offensive designed to develop the situation and to establish or regain contact.

Neutralize – To render ineffective or unusable.

Occupy – A tactical mission task that involves a force moving into an area so that it can control the ent area. Both the force's movement to and occupation of the area occur without enemy opposition.

Open – being in a position or adjustment to permit passage

Penetrate – A form of maneuver in which an attacking force seeks to rupture enemy defenses on a narrow front to disrupt the defensive system.

Prevent – to keep from happening or existing

Protect – The preservation of the fighting potential of a force so the commander can apply maximum force at the decisive time and place.

Pursuit – An offensive operation designed to catch or cut off a hostile force attempting to escape, with the aim of destroying it.

Raid- An operation, usually small scale, involving a swift penetration of hostile territory to secure information, confuse the enemy, or to destroy installations. It ends with a planned withdrawal upon completion of the assigned mission

Reconstitution – Extraordinary actions that commanders plan and implement to restore units to a desired level of combat effectiveness commensurate with mission requirements and available resources.

Reconnaissance in force –An offensive operation designed to discover and/or test the enemy's strength or to obtain other information. A deliberate combat operation designed to discover or test the enemy's strength, dispositions, and reactions or to obtain other information.

Reduce – Extraordinary actions that commanders plan and implement to restore units to a desired level of combat effectiveness commensurate with mission requirements and available resources.

Relief in place – A tactical enabling operation in which, by direction of higher authority, all or part of a unit is replaced in an area by the incoming unit.

Retirement – An operation in which a force out of contact moves away from the enemy.

Retrograde – A type of defensive operation that involves organized movement away from the enemy.

Retain – To occupy and hold a terrain feature to ensure it is free of enemy occupation or use.

River crossing – An operation required before ground combat power can be projected and sustained across a water obstacle. It is a centrally planned and controlled offensive operation that requires the allocation of external crossing means and a force dedicated to the security of the bridgehead.

Secure – To gain possession of a position or terrain feature with or without force, and to make such disposition as well prevent, as far as possible, its destruction or loss by enemy action.

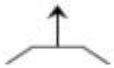
Screen- A task to maintain surveillance; provide early warning to the main body; or impede, destroy, and harass enemy reconnaissance within its capability without becoming decisively engaged.

Seize – To gain physical possession of a terrain feature from an enemy force.

Spoiling Attack – A form of attack that preempts or seriously impairs an enemy attack while the enemy is in the process of planning or preparing to attack.

Support – The action of a force that aids, protects, complements, or sustains another force in accordance with a directive requiring such action.

Support By Fire – A tactical mission task in which a maneuver force moves to a position where it can engage the enemy by direct fire in support of another maneuvering force.



Suppress (Suppression) – Direct or indirect fires, electronic countermeasures (ECM), or smoke brought to bear on enemy personnel, weapons, or equipment to prevent effective fire on friendly forces.

Surprise – One of the nine principles of war: Strike the enemy at a time or place or in a manner for which he is unprepared.

Survivability – Concept which includes all aspects of protecting personnel, weapons, and supplies while simultaneously deceiving the enemy. Survivability tactics include building a good defense; employing frequent movement; using concealment, deception, and camouflage; and constructing fighting and protective positions for both individuals and equipment. Encompasses planning and locating position sites, designing adequate overhead cover, analyzing terrain conditions and construction materials, selecting excavation methods, and countering the effects of direct and indirect fire weapons.

Targeting – The process of selecting targets and matching the response to them, taking account of operational requirements and capabilities.

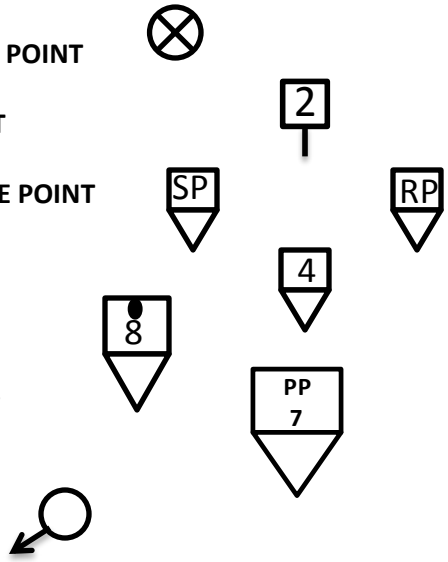
Turn – A tactical mission task that involves forcing an enemy force from one avenue of approach or movement corridor to another.

Withdrawal operation –A planned retrograde operation in which a force in contact disengages from an enemy force and moves in a direction away from the enemy.

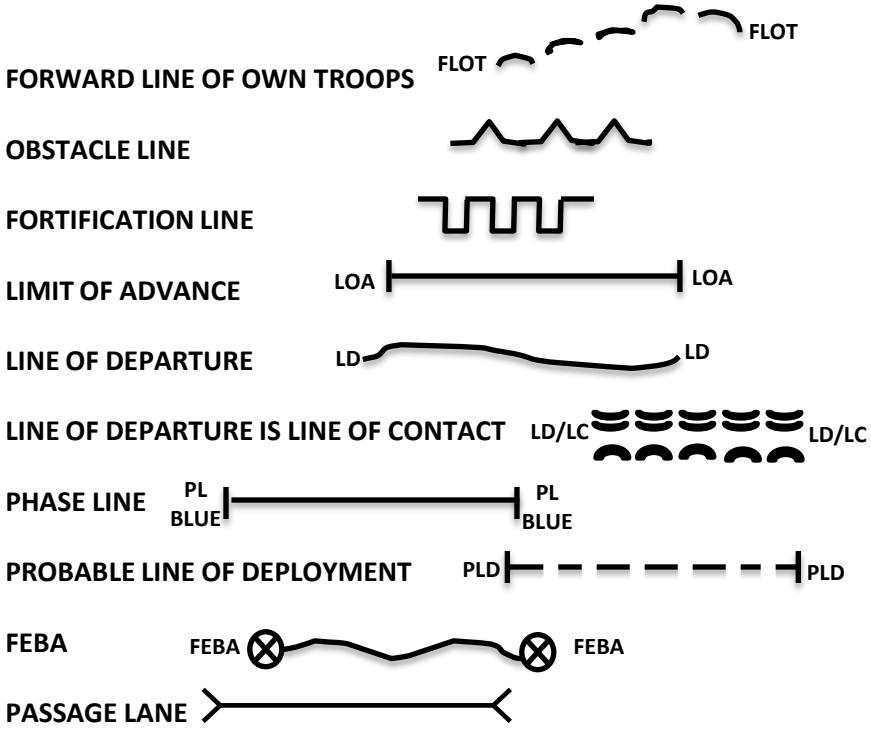
Withdrawal **Withdrawal Under Pressure**

Note: Above list is not all inclusive

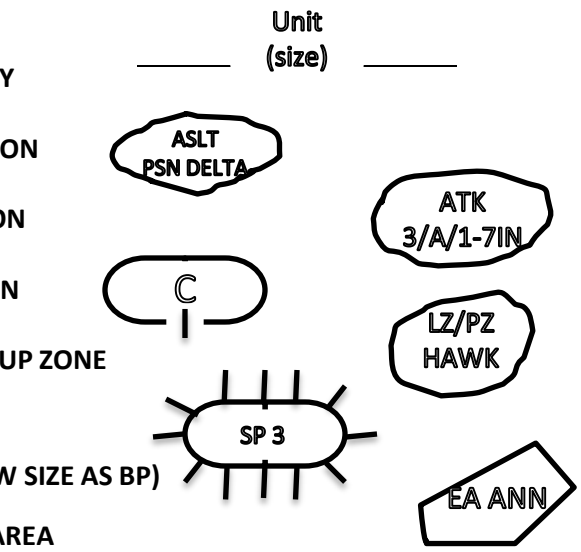
POINTS



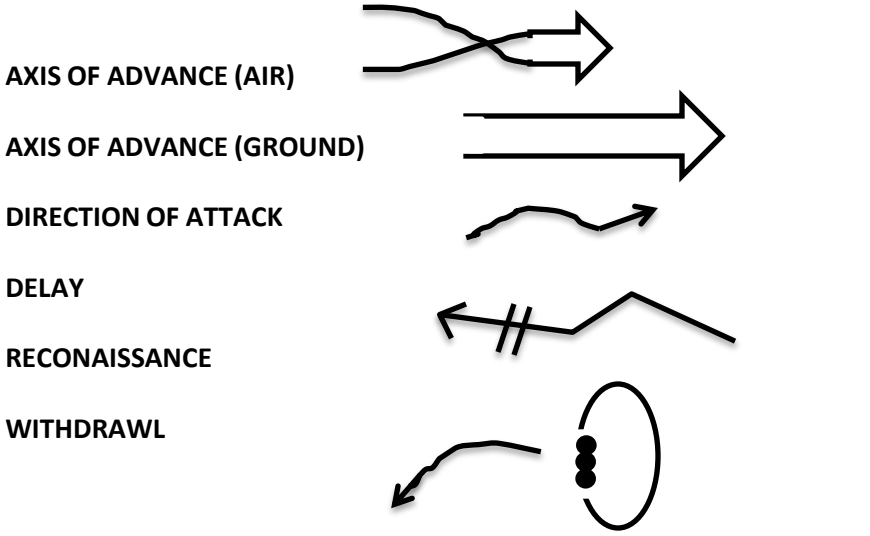
LINES



AREAS



MOVEMENTS



WEAPONS

BASIC SYMBOLS (TOP)

Light Automatic Weapon

Missile

Rocket

Gun

BFV

Tank

APC

155MM HOW (SP)

SIZE (SHAFT)

LT MD HVY

Dragon

60MM Mortar

M60 MG

Stinger

ADDITIONAL SYMBOLS (BASE)

High Trajectory

Flat Trajectory

Self Propelled

Air Defense

Motorized

FIRE SUPPORT COORDINATING MEASURES

COORDINATED FIRE LINE

CFL (ESTAB UNIT) CFL

DTG EFF

RESTRICTIVE FIRE AREA

RFA
ESTAB UNIT
DTG EFF

AIRSPACE COORINATION AREA

ACA EFF:
DTG
ESTAB UNIT

MIN ALT: FT ABOVE SEA LEVEL

MAX ALT: WIDTH

RESTRICTIVE FIRE LINE

RFL (ESTAB UNIT UNIT) RFL

DTG EFF

Figure A-14. Example no fire area

Figure A-6. Critical friendly zone

NAI / TAI / DP

NAI: A point or area along a AA where activity will confirm a COA
TAI: An engagement point along a AA where the interdiction of the enemy will deprive him a particular capability.
DP: Identify events, areas, and points where tactical decisions are required and where these decisions must be made

POINT NAI

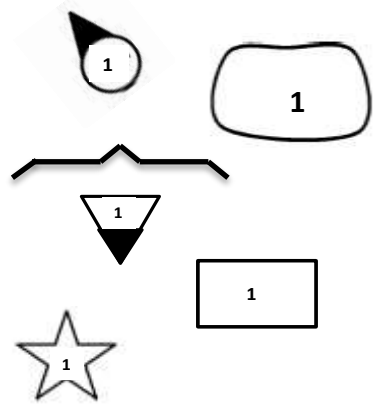
AREA NAI

ROUTE NAI

POINT TAI

AREA NAI

DP



UNIT ROLES

INFANTRY (BASIC SYMBOL)

AIR ASSAULT

APC

BRADLEY

BRADLEY (DISMOUNTED)

LIGHT

AIR DEFENSE

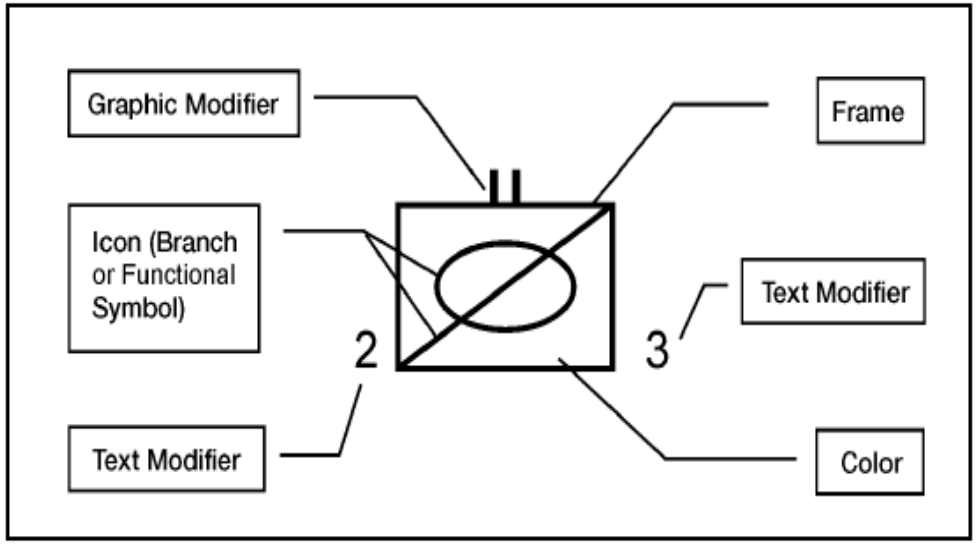
ANTIARMOR

ARMOR

ENGINEER

FIELD ARTILLERY

SCOUTS



Echelon	*Symbol*
Team[1]/Crew	Ø
Squad[2]	•
Section[3]	••
Platoon[4]/Detachment	•••
Company[5]/Battery[6]/Troop[7]	|
Battalion[8]/Squadron	||
Regiment[9]/Group[10]	|||
Brigade[11]	X
Division[12]	XX
Corps[13]	XXX

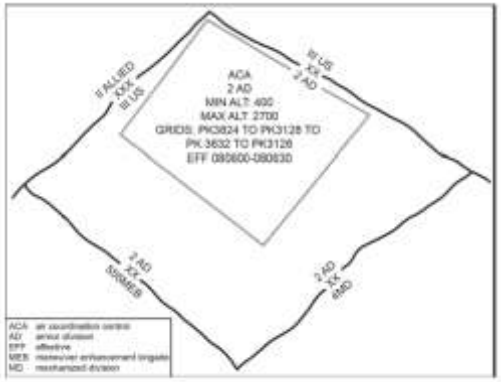


Figure A-1. Example airspace coordination area

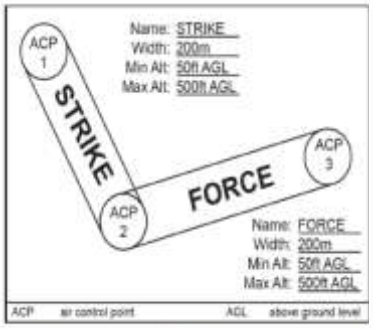


Figure A-2. Example air corridor and air control points

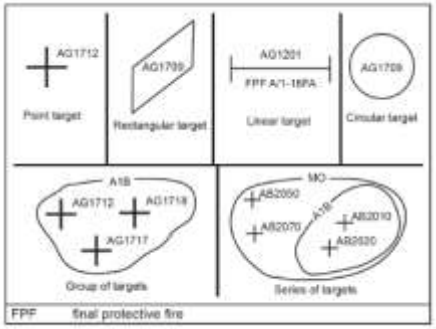


Figure A-17. Fire support target symbols

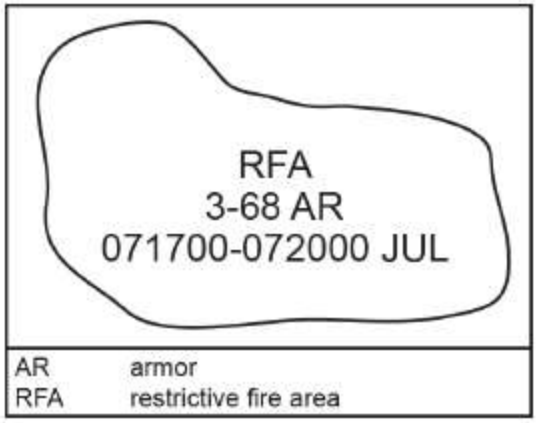


Figure A-15. Example restrictive fire area

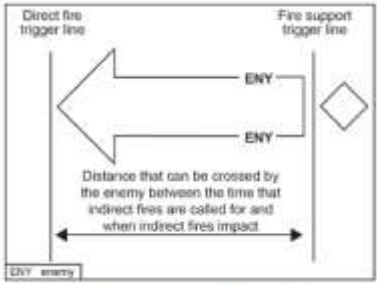


Figure A-10. Trigger line examples

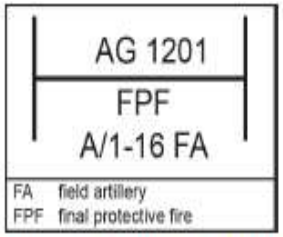


Figure A-39. Final protective fire

Figure A-12. III Corps fire support coordination line

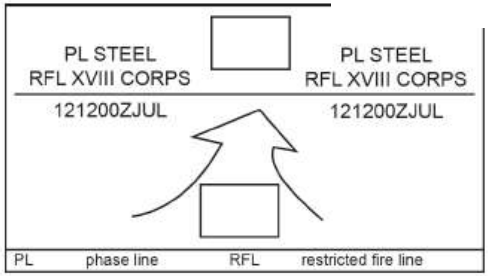


Figure A-16. Example restrictive fire line

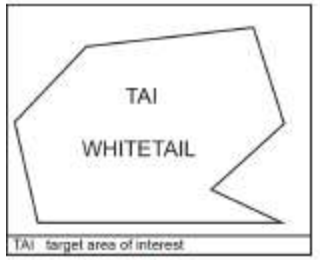


Figure A-26. Example target area of interest

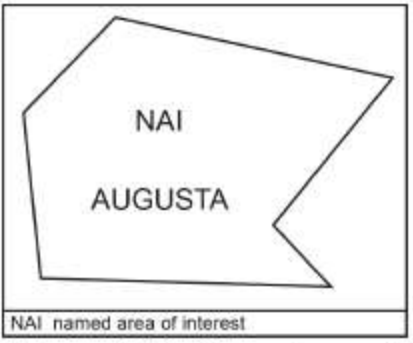


Figure A-21. Named area of interest Augusta

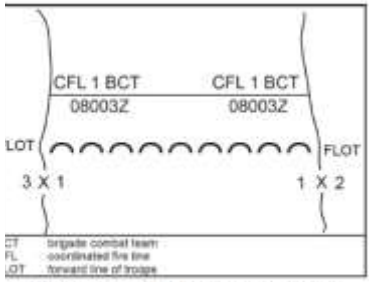


Figure A-11. 1st Brigade combat team coordinated fire line

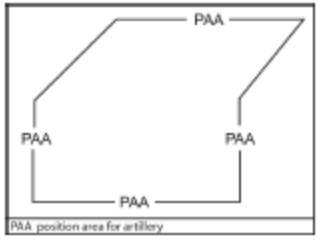


Figure A-24. Position area for artillery

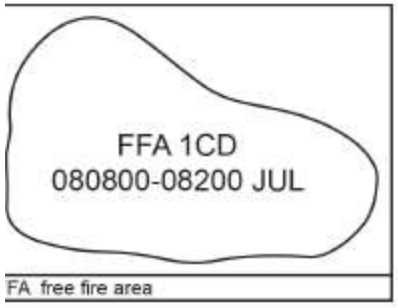


Figure A-13. 1CD free-fire area

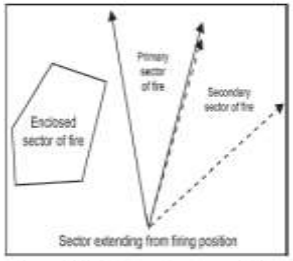


Figure A-8. Example sector of fire

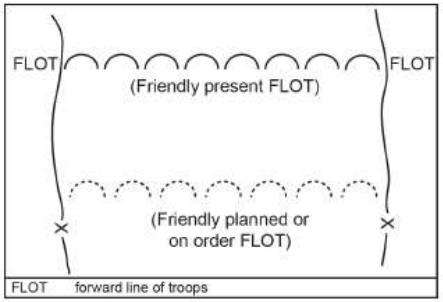


Figure A-18. Example forward line of own troops

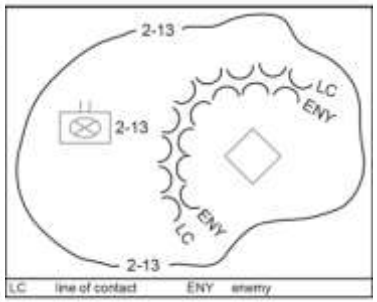


Figure A-19. Line of contact

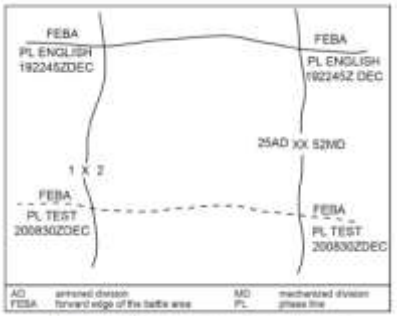


Figure A-40. Forward edge of the battle area

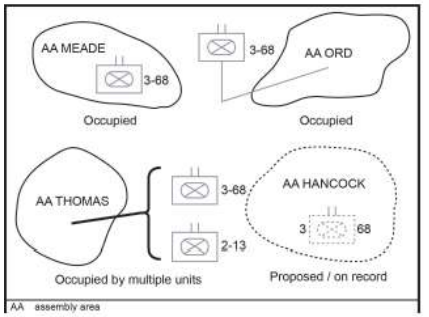


Figure A-3. Assembly area examples

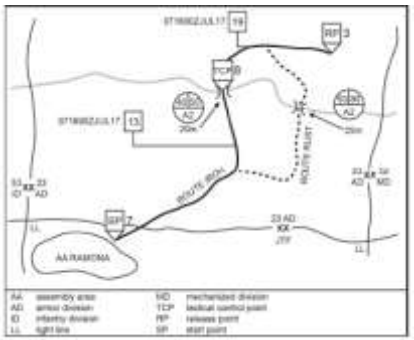


Figure A-25. Example routes

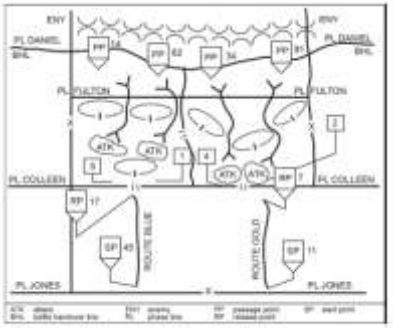


Figure A-29. Battle handover line in a rearward passage of lines

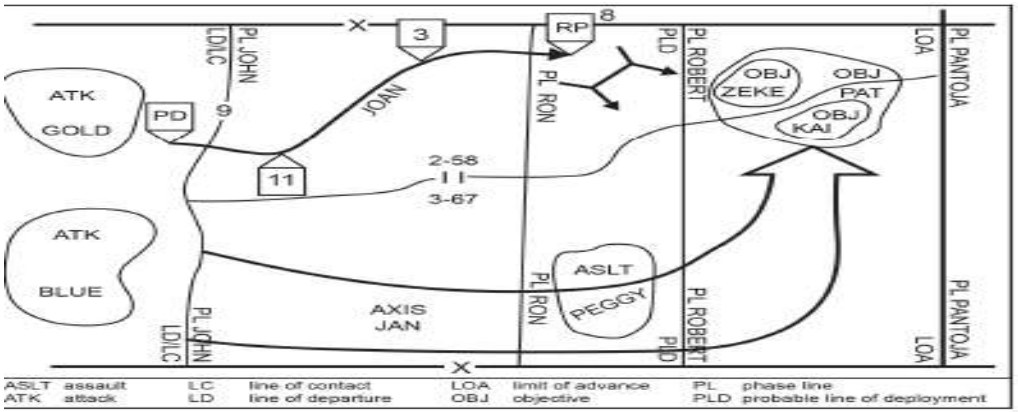


Figure A-23. Phase lines with other control measures

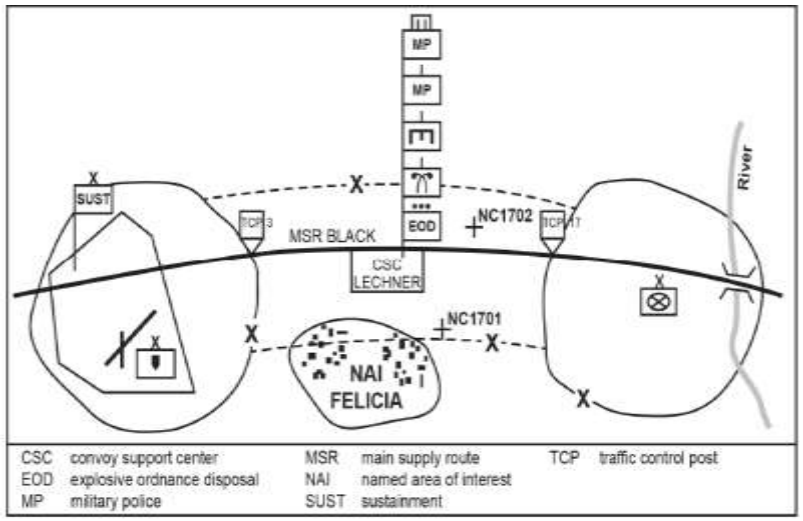


Figure A-20. Example movement corridor

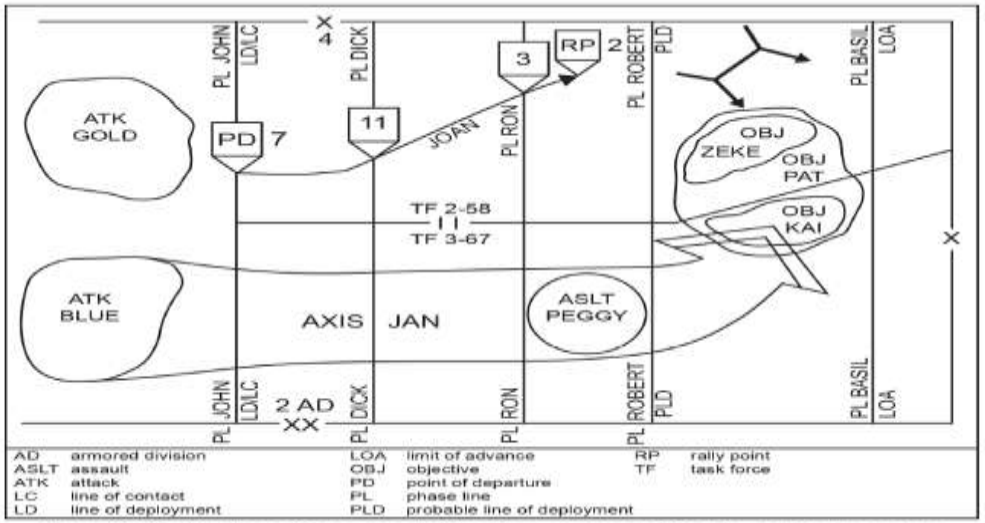
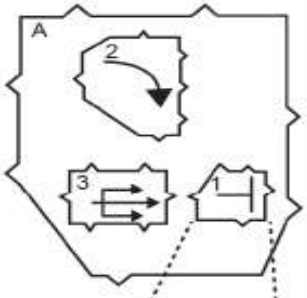


Figure A-28. Attack positions used with other common offensive control measures

Obstacle control measure	Emplacement authority From	Emplacement authority To	Graphic	Example
Zone	CORPS	DIV	Letter designation Effect graphic optional	
	DIV	BDE		
Belt	CORPS	BDE[1]	Number designation Effect graphic optional	
	DIV	BDE[1]		
	BDE	TF		
Group	DIV	BDE[2]	Letter designation	Obstacle groups in a belt
	BDE	TF[2]	Effect symbol is the graphic	
	TF	CO TRP		
Obstacle restricted area (ORA)	Any		52ID 120900-162400SEP	

1 - Rarely done by corps and divisions, but possible.

2 - Done only when directed and integrated with corps or division fire plans.

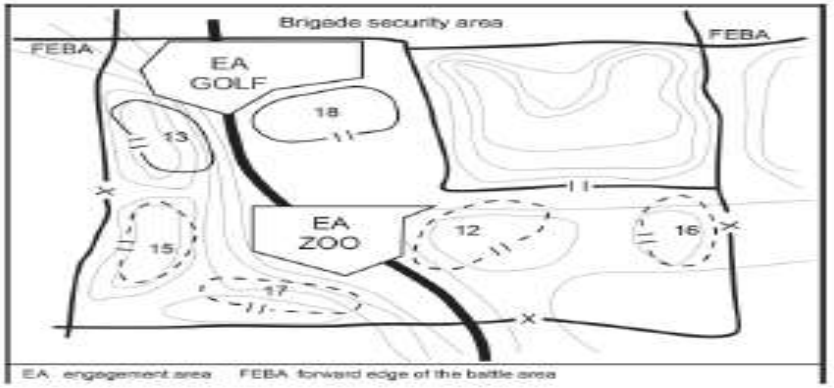


Figure A-35. Area of operations and battle position control measures used in combination

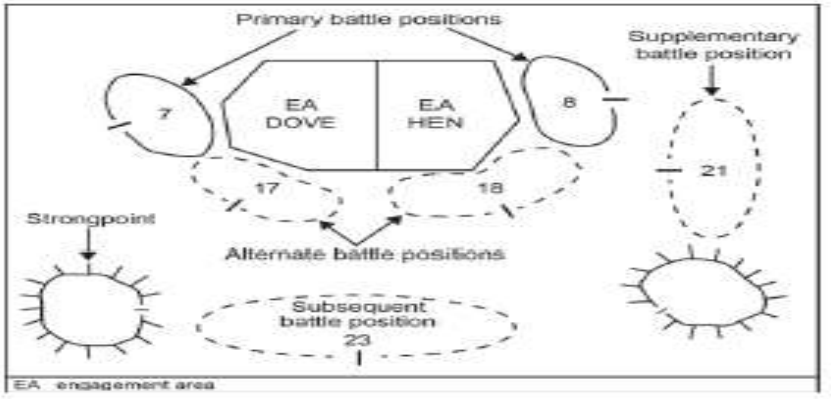


Figure A-36. Five kinds of battle positions

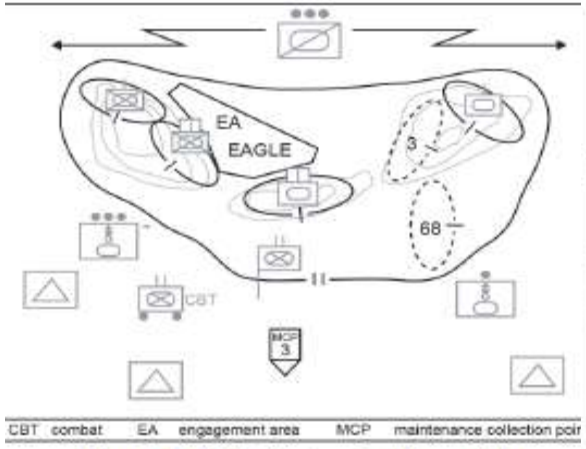


Figure A-34. Task force battle position

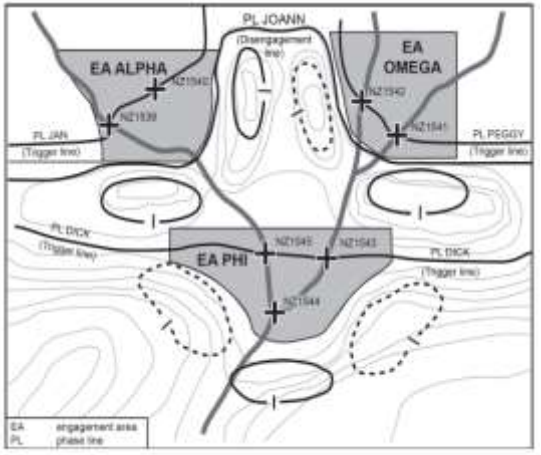


Figure A-7. Example battalion engagement area

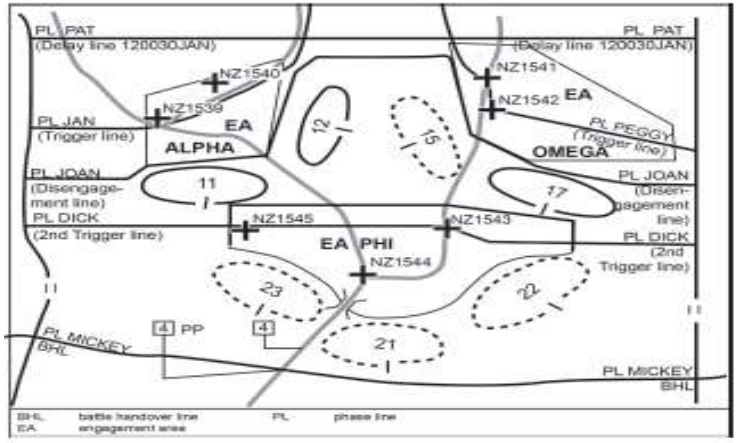


Figure A-38. Direct fire control measures

A

AA avenue(s) of approach
AAR after-action review
ACPS Army Civilian Personnel System
ACU Army combat uniform
ADA air defense artillery
ADAM area-denial artillery munition
ADAM air defense airspace management
ADCON administrative control
ADP Army doctrine publication
ADRP Army doctrine reference publication
ADW air defense warning
AFATDS Advanced Field Artillery Tactical Data System
AHD antihandling devices
ALO air liaison officer
AMD air and missile defense
AMC air mission commander
AO area of operations
AP antipersonnel
APC armored personnel carrier
APDS armor-piercing discarding sabot
APOD aerial port of debarkation
ARFOR Army forces
AR Army regulation
ARNG Army National Guard
ARTEP Army Training and Evaluation Program
aslt psn assault position
ASCOPE areas, structures, capabilities, organizations, people, and events
ASOC air support operations center
AT antitank
ATP Army tactics publication
ATTP Army tactics, techniques, and procedures
ATGM antitank guided missile
atk psn attack position

B

BAE brigade aviation element
BCT brigade combat team
BDAR battle damage assessment and repair
BDO battle dress over garments
BFV Bradley fighting vehicle
BHL battle handover line
BMNT begin morning nautical twilight
BP battle position
BSA brigade support area
BUA built-up area

C

C2 command and control
CACOM CA communications
CANA convulsant antidote for nerve agent
CAPT-A CA planning team A
CAS close air support
CASEVAC casualty evacuation
CAT civil affairs team
CBRN chemical, biological, radiological, or nuclear (replaces NBC except when referring to existing reports and reporting systems)
CBRNE-CM chemical, biological, radiological, nuclear, and high-yield explosive consequence management
CCA close combat attack
CCIR commander's critical information requirements
CCP casualty collection point
chem chemical
CIC combat in cities
CFL coordinated fire line
CID criminal investigation division
CLS combat lifesaver
CLU command launch unit
CJCSM Chairman of the Joint Chiefs of Staff manual
CMO civil-military operations
CMOC civil-military operations center
CO commanding officer
COA course of action
COE contemporary operational environment
COMSEC communications security
CONOP concept of operations
CONUS continental United States
COP common operational picture
COS chief of staff
CP command post
CS combat support

D

DA Department of the Army
DA pam Department of the Army pamphlet
DED detailed equipment decontamination
DEUCE deployable universal combat earthmover
DLIC detachment left in contact
DOD Department of Defense
DPICM dual-purpose improved convention munition
DRAW-D defend, reinforce, attack, withdraw, delay
DTD detailed troop decontamination
DS direct support
DVE driver's vision enhancer
DZ drop zone

E

EA engagement area
ECOA enemy course of action
EEFI essential elements of friendly information
EENT end evening nautical twilight
EFST essential fire support task
EMT emergency medical treatment
EOD explosive ordnance disposal
EPW enemy prisoner of war

F

FA field artillery
FASCAM family of scatterable mines
FBCB2 Force XXI battle command brigade and below
FCL final coordination line
FDC fire direction center
FEBA forward edge of battle area
FFIR friendly force information requirements
FHA foreign humanitarian assistance
FIBUA fighting in built-up areas
FIST fire support team
FLOT forward line of own troops
FM frequency modulated
FM field manual
FO forward observer
FPF final protective fire
FPL final protective line
FRAGO fragmentary order
FS fire support
FSB forward support battalion
FSCM fire support coordination measure
FSE fire support element
FSEM fire support execution matrix
FSCOORD fire support coordinator
FSO Fire Support Officer

G

G-1 assistant chief of staff, personnel
G-2 assistant chief of staff, intelligence
G-4 assistant chief of staff, logistics
G-8 assistant chief of staff, resource management
G-9 assistant chief of staff, civil affairs operations
G/VLLD ground/vehicle laser locator designator
GPS Global Positioning System
GS general support
GSR ground surveillance radar
GS-R general support-reinforcing
GT gun target
GTAO graphic terrain analysis overlay

H

HAZMAT hazardous materials
HCA humanitarian and civic assistance
HCP health and comfort pack
HDC headquarters distribution company
HE high explosive
HEDP high explosive, dual purpose
HHC headquarters and headquarters company
HN host nation
HPT high-payoff target
HSS health service support
HUMINT human intelligence

I

I2R imaging infrared
IAW in accordance with
IBCT Infantry brigade combat team
ICV Infantry carrier vehicle
IED improvised explosive device
illum illumination
IM information management
INFOSYS information systems
IO information operations
IPB intelligence preparation of the battlefield
IR infrared
ISU integrated sight unit
ISR intelligence, surveillance, and reconnaissance
IV intervisibility

J

JFACC joint force air component commander
JFC joint force commander
JP joint publication
JSTARS joint surveillance target attack radar system
JWARN joint warning and reporting network

K

KIA killed in action

L

LCE load-carrying equipment
LD line of departure
L-MOPP laser mission-oriented protective posture
LOA limit of advance
LOC length of column
LOGPAC logistics package
LOS line of sight
LRP logistics release point
LZ landing zone

M
MANPADS Man-Portable Air Defense System
MBA main battle area
MBC mortar ballistics computer
MCOO modified combined obstacle Overlay
MCRP Marine Corps reference publication
MCWP Marine Corps warfighting publication
MEB maneuver enhancement brigade
MDI modernized demolition initiator
MDMP military decision-making process
MEDEVAC medical evacuation
MEL maximum engagement line
METT-TC mission, enemy, terrain (and weather), troops (and support) available, time available, and civil considerations
MEV medical evacuation vehicle
MGS mobile gun system
MIB motorized infantry battalion (used to train threat model)
MIP motorized infantry platoon (used to train threat model)
MLRS multiple launch rocket system
mm millimeter
MOE measure of effectiveness
MOP measure of performance
MOPMS modular pack mine system
MOPP mission-oriented protective posture
MP military police
MPAT multipurpose antitank
MR moonrise
MRB motorized rifle battalion
MRE meal, ready to eat
MRP motorized rifle platoon
MS moonset
MSD minimum safe distance
MSL minimum safe line
MSR main supply route
MTC movement to contact
MTF medical treatment facility
MTF medical treatment facility
N
NAAK nerve agent antidote kit
NAI named area(s) of interest
NBCWRS Nuclear, Biological, and Chemical Warning and Reporting System
NCA National Command Authority
NCO noncommissioned officer
NCS net control station
NEO noncombatant evacuation operations
NFA no-fire area
NGO nongovernmental organization
NLT not later than
NVD night vision device
O
OAKOC observation and fields of fire, avenues of approach, key terrain, observation, and cover and concealment
OBSTINTEL obstacle intelligence
OH observation helicopter
OIC officer in charge
OP observation post
OPCON operational control
OPORD operation order
OPLAN operation plan
OPSEC operations security
ORP objective rally point
ORSA operations research/systems analyst
OTM on-the-move
P
PA physician's assistant
PAO public affairs officer
PC personnel carrier
PCC precombat check
PCI precombat inspection
PEWS platoon early warning system
PIR priority intelligence requirements
PL phase line
PLD probable line of deployment
PMCS preventive maintenance checks and services
PME peacetime military engagement
PMESII-PT political, military, economic, social, information, infrastructure, physical environment, and time
POC point of contact
POF priority of fire
POL petroleum, oils, and lubricants
pos position
POSNAV position navigation
PSG platoon sergeant
PSYOP psychological operations
PUC personnel under control
PVO private voluntary organization
PZ pickup
R
R reinforcing
R&S reconnaissance and surveillance
RAAM remote antiarmor mine
RCPA relation combat power analysis
RCU remote control unit
RD round
RDD radiological dispersal device
RDSP rapid decision-making and synchronization process
RED risk estimate distance
REDCON readiness condition
RFL restrictive fire line
ROE rules of engagement
ROI rules of interaction
RP release point
RPG rocket-propelled grenade
RSOI reception, staging, onward movement, and integration
S&R stability and reconstruction
S
S-1 personnel staff officer (adjutant)
S-2 intelligence staff officer
S-3 operations staff (and training) officer
S-4 supply officer
S-6 communications
S-9 civil affairs operations staff officer

SBCT Stryker brigade combat team
SCATMINE scatterable mine
SEAD suppression of enemy air defenses
SEE small emplacement excavator
SF special forces
SFODA special forces operational detachment-A (*also known as* A-Team)
SITEMP situation template
SITREP situation report
SOC special operations command
SOF special operations forces
SOI signal operating instructions
SOP standing operating procedure
SOSRA suppress, obscure, secure, reduce, and assault
SP start point
SPOD sea port of debarkation
SPOTREP spot report
sqd squad
SR sunrise
SS sunset
STANAG standardization agreement
T
TACON tactical control
TACP tactical air control party
TC tank commander
TCP traffic control posts
TDA table of distribution and allowances
TF task force
TLP troop-leading procedures
TOC tactical operations center
TOE table of organization and equipment
TPME task, purpose, method, and effects
TRP target reference point
TSM target synchronization matrix
TSOP tactical standing operation procedures
TTP tactics, techniques, and procedures
U
U.S. United States
USAF U.S. Air Force
UAS unmanned aerial system
UH utility helicopter
UN United Nations
UO urban operations
US United States
USACE United States Army Corps of Engineers
V
VPK vehicles per kilometer
VPM vehicles per mile
W
WARNO warning order
WCS weapons control status
WFF warfighting function
WIA wounded in action
WMD weapons of mass destruction
WP white phosphorus
X
XO executive officer

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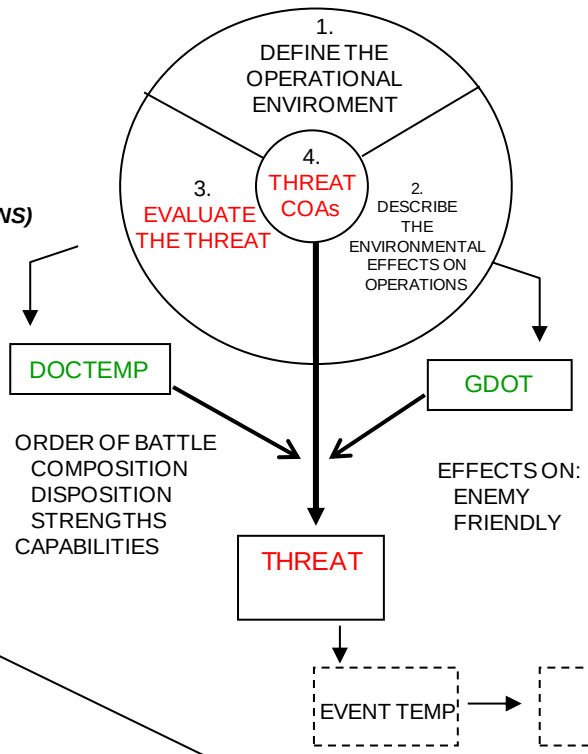
IPB PROCESS

STEP 1 (***DEFINE THE OPERATIONAL ENVIROMENT***)

- ID significant characteristics of the environment
- ID Limits of AO (PL, Boundaries, etc..)
- Establish limits of AI (CAS/CCA, ARTILLERY, RESERVES (CAR))
- ID amount of detail required (how much time do you have?)
- Evaluate existing data bases and ID intelligence gaps (IR/PIR)
- Collect required intelligence materials.

STEP 2 (***DESCRIBE THE ENVIRONMENTAL EFFECTS ON OPERATIONS)***

- Analyze Terrain and develop (GDOT)
  - Obstacles (existing/reinforcing)
  - Avenues of Approach (build with mobility corridors)
  - Key Terrain (*SIGNIFICANT* advantage to either. Decisive?)
  - Observation and Fields of Fire (Can I see? Vs. Can I shoot?)
  - Cover and Concealment (cover from what caliber?)
- Analyze the weather
  - Visibility (How far and when can I see. Air & Ground)
  - Wind (speed, from & to. Air/Ground/IDF)
  - Precipitation (effects on ROM, Air & Ground)
  - Cloud Cover (effects on CAS/CCA/UAV)
  - Temperature (Effects on SM/M1)
- Analyze the factors of COE & civil considerations
  - Areas (effects how you conduct operations)
  - Structures (cover and concealment from what)
  - Capabilities (SWEAT)
  - Organizations
  - People
  - Event
- Describe effects on threat and friendly capability using broad conceptual statements (effects in conjunction with terrain analysis)



STEP 3 (***Evaluate the Threat***)

- Update and create Thread Models (DOCTEMP)
  - Convert threat doctrine or patterns of operation to graphics
  - Describe threat tactics and options
  - ID High Value Targets and Target Value Analysis
    - 13 Categories

C2	CBRN-E
FS	CL III
MNV	CL V
ADA	MAIN
EN	LIFT
RECCE	LOC
REC	

- ID Threat capabilities
  - RCPA/Reverse WFF Analysis
  - Capabilities (Strength vs. Weakness)
  - Composition/Strength (# not %)/Order of Battle
  - DOCTEMP/Disposition

STEP 4 (***Determine Threat COA)***

- ID likely threat OBJs and Desire end state (MA on the ENY)
- ID the full set of threat COAs available
- Evaluate and prioritize each COA
- Develop each COA in detai (AGADAP in full)
- ID initial collection plan (see Step 1)

To help analyze many civil considerations, commanders and staff can provide Structure to there assessments by categorizing according to ASCOPE. FM3-06, ch.9*

Be able to answer the following three critical questions when you are done with Co Level IPB.

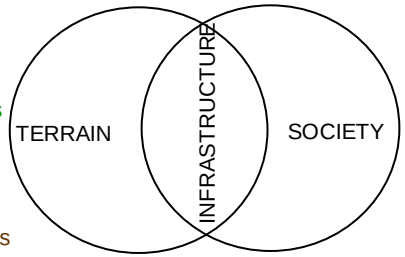
1. What does he look like?
2. How can he hurt us?
3. How can we hurt him?

Products of IPB:

Modified Combined Obstacle Overlay
Situation Template
Event Template
High Value Targets

AREAS / STRUCTURES

DC Camps
Street Patterns
Urban Patterns
Criminal Enclaves
Key Commercial Zones
Political Districts
Buildings
Blue Prints
Underlying Terrain
Subterranean Passages



ORG / PEOPLE / EVENTS

NGO
Media
Labor Unions
Authority's
Culture
Loyalties
Perceptions
Relationships
Demographics
Groups/Subgroups
Religious Holiday
Civil Events

CAPABILITES

Fuel
Fire/Rescue
Electrical Power
Transportation
Communication
Health Services

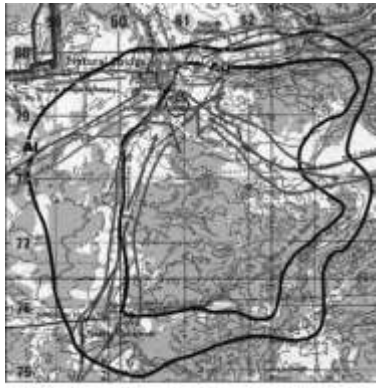
In analyzing the enemy, the leader must understand the intelligence preparation of the battlefield (IPB). Although he does not usually prepare IPB products for his subordinates, he must be able to use the products of the higher headquarters' IPB effectively. (FM 3-21.10, para 2-86.)*

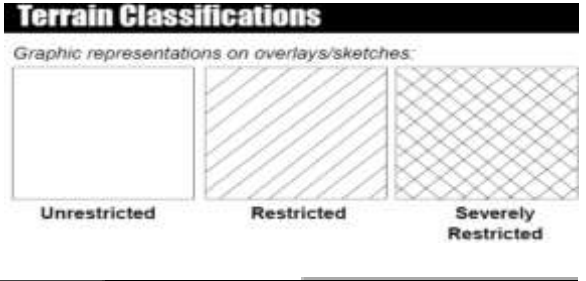
IPB TEMPLATE MATRIX					
	MCOO	**Doctrinal Template**	**Situational Template**	**Event Template**	**Decision Support Template**
Obstacles to Ground Movement	**X**				
Terrain Classification	**X**				
Objectives/Control Measures	**X**				**X**
Avenues of Approach Mobility Corridors	**X**			**X**	**X**
Key Terrain	**X**				
All Enemy Units (BOS)		**X**			
Enemy units on Avenures of Approach			**X**		
Time Phase Lines			**X**	**X**	**X**
Named Areas of Interest				**X**	
Targeted Areas of Interest					**X**
Decision Points					**X**

IPB GRAPHICS: STANDARD vs. COIN	
Standard Process	**COIN Process**
Terrain MCOO	Population Status Logistical Sustainability Overlay Concealment and Cover Overlay Lines of Communication Overlay Key Facilities and Targets Overlay
Weather Overlay	Weather Overlay
Threat Overlay	Insurgent Threat Overlay Criminal Threat Overlay Psyop Threat Overlay Exernal Support Overlay Terrorist Threat Overlay
N/A	HN Government Overlay
N/A	HN Military Disposition Overlay
Doctrinal Template	Doctrinal Template Operational Overlay Patterns Overlay
Situation Template	Incident Map (S.A.) Key Facilities and Targets Overlay
Event Template DST	Event Template and Matrix DST, DSM

TERRAIN ANALYSIS (OAKOC)

•**Observation and Fields of Fire**: Helps identify: Potential engagement areas, defensible terrain and equipment positions, and locations where maneuvering forces are most vulnerable to thereat observation and fires.
•**Avenues of Approach**: Identify and categorize Mobility Corridors (where a force is canalized due to terrain restrictions), then group mobility corridors to form AAs, evaluate and prioritize AAs.
•**Key Terrain**: Any locality or area the seizure, retention, or control of which affords a marked advantage to either combatant. Examples of key terrain in the defense include: terrain which permits the defender to cover an obstacle by fire, or important road junctions or communications centers
•**Obstacles:** Helps identify: pertinent obstacles in the AI, the effect of each obstacle on the mobility of the evaluated force, and combines their individual effects into an integrated product. Obstacle Categories: Reinforcing (tactical and protective), Existing (natural and manmade). Terrain Classifications are evaluated as Unrestricted, Restricted, or Severely Restricted.
•**Cover and Concealment**: Helps identify: AAs defensible terrain and potential battle positions, and potential assembly and dispersal areas using a thorough analysis of Line of Sight (LOS) and Inter0visibility (IV) Lines.
•**Additional Consideration**: Vegetation, Surface Soil, Drainage, Slope, Transportation (LOC), Canopy





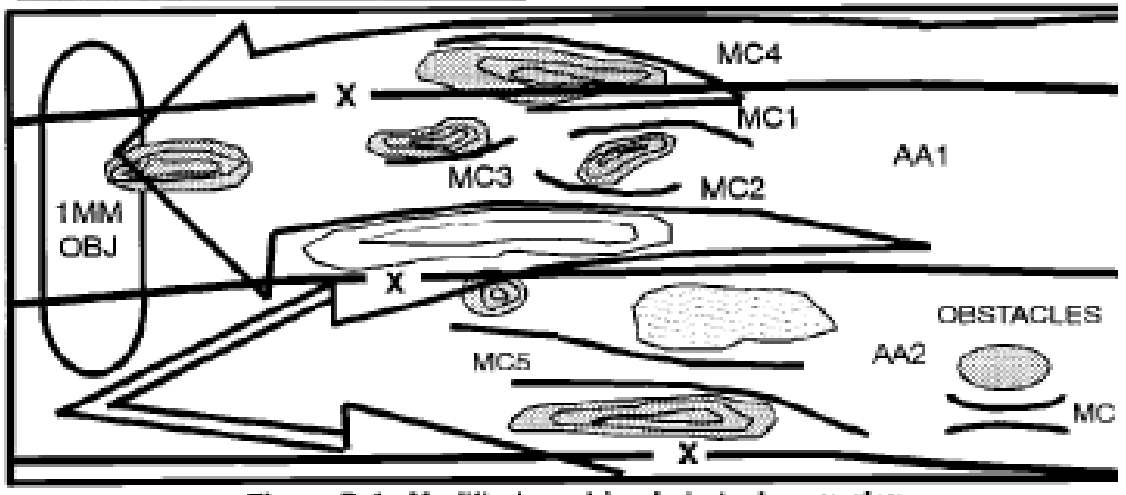
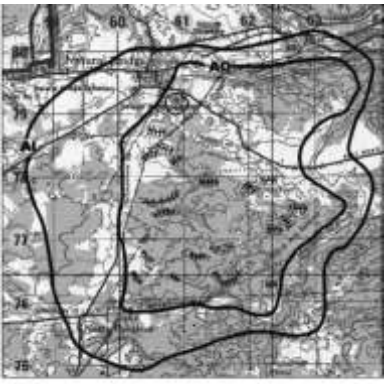


Figure B-1. Modified combined obstacles overlay.



Weather Analysis

•**Visibility:** Low Visibility (<3KM) favors attacker. Limits employment of aircraft, aerial sensors, airborne forces. May canalize attack forces onto well defined avenues of approach, BMNT, SR, SS, EENT, MR, MS
•**Wind:** Speed and direction of surface and altitude winds favor upwind forces. Upwind force generally has better visibility. Speed and direction have significant impact on smoke and NBC Operations.
•**Precipitation**: Rain and snow can combine with chemicals to create "Hot Spots" in low-lying areas. Light rain can distribute chem more evenly and create higher vapor concentrations. Traffic ability can be effected. Snow can reduce effectiveness of mines and indirect fires.
•**Cloud Cover:** Altitude of cloud cover influences aviation operations. Can reduce illum and visibility. Can effect laser guided munitions (e.g. copperhead, hellfire). Greater than 70% cloud cover creates neutral gradient conditions which favor smoke and chemical.
•**Temperature and Humidity**: Personnel and equipment performance. Air density affects smoke operations and aircraft payloads. Potential for civil disorder (most riots occur during hot weather seasons)
•**Temperature Inversion**: A layer of cooler air is trapped near the ground by a layer of warmer air above. During a Temperature Inversion, often following BMNT, it is possible to rapidly cover a very large area with dense smoke. Non-Persistent Chemical (NPCHEM) agents also take longer to dissipate during a Temperature Inversion.
•**Thermal Crossover:** During Thermal Crossover the thermal device does not have the capability to detect the target. A difference in temperature or thermal contrast is required for these devices to detect a target. May occur when the morning sun strikes a target or on cloudy adverse weather days.

Weather Effects Critical Values Matrix

Mission	Weather Element	Favorable (GO)	Marginal (SLOW GO)	Unfavorable (NO GO)
Maneuver: Mobility (Track Vehicles Day)	Visibility	More than 1.5 km	0.8 to 1.5 km	Less than 0.8 km
	Rainfall	Less than 0.1 in / hr	0.1 to 0.5 in / hr	More than 0.5 in / hr
	Snow Depth	Less thank 12 in	12 to 20 in	More than 20 in
Maneuver: Mobility (Track Vehicles , Night with PVS-5 NVG)	Visibility	More than 0.2 km	0.1 to 0.2 km	Less than 0.1 km
	Rainfall	Less than 0.1 in / hr	0.1 to 0.5 in / hr	More than 0.5 in / hr
	Snow Depth	Less thank 12 in	12 to 20 in	More than 20 in
Maneuver: Mobility (Dismounted infantry)	Visibilty	More than 0.3 km	0.1 to 0.3 km	Less than 0.1 km
	Rainfall	Less than 0.1 in / hr	0.1 to 0.5 in / hr	More than 0.5 in / hr
	Snow Depth	Less than 3 in	3 to 6 in	More than 6 in
	Temperature	Less than 32 deg C	More than 32 deg C	----------
	Wind Chill Temperature	More than 0 deg C	0 deg C to -30 deg C	Less than -30 deg C
Maneuver: Weapons positioning (Antiarmor direct fire)	Visibility	More than 3.0 km	0.5 to 3.0 km	Less than 0.5 km
	Temperature	More than -18 deg C	Less than -18 deg C	----------
Fire Support (155-mm)	Visibility	More than 5.0 km	1.5 t0 5.0 km	Less than 1.5 km
	Ceiling	More than 800 ft	500 to 800 ft	Less than 500 ft
	Surface Wind	Less than 35 kts	25 to 50 kts	More than 50 kts
	Snow Depth	Less than 4.0 in	4.0 to 6.0 in	More than 6 in
Fire Support (CAS A-10)	Visibility	More than 8.0 km	5.0 to 8.0 km	Less than 5.0 km
	Ceiling	More than 3000 ft	500 to 3000 ft	Less than 500 ft
Intelligence (Fixed wing visual recon)	Visibility	More than 5.0 km	3.0 to 5.0 km	Less than 3.0 km
	Ceiling	Less than 3/8 clouds	3/8 to 5/8 clouds	More than 5/8 clouds
Air Defense Artillery (Vulcan, Chaparral, Stinger)	Visibility	More than 5.0 km	3.0 to 5.0 km	Less than 3.0 km
	Ceiling	More than 5000 ft	3000 to 5000 ft	Less than 3000 ft
	Rainfall	Less than 0.5 in / hr	0.5 to 1.0 in / hr	More than 1.0 in / hr
NBC (Chemical, artillery delivery) Smoke	Wind Below 16 meters	Less than 5 kts	5 to 7 kts	More than 7 kts
	Stability	Stable	Neutral	Unstable (lapse)
	Temperature	More than 21 deg C	4 deg to 21 deg C	Less than 4 deg C
	Humidity	More than 60%	40 to 60%	Less than 40%
	Precipitation	None	Light	Moderate to Heavy
Airborne (From C-130 to C-14)	Visibility	More than 5.0 km	1.0 to 5.0 km	Less than 1.0 km
	Ceiling	More than 500 ft	300 to 500 ft	Less than 300 ft
	Surface Wind	Less than 10 kts	10 to 13 kts	More than 13 kts
	Precipitation	None	Light	Freezing Rain or Hail
Aviation (Rotary wing)	Visibility	More than 1.5 km	0.4 to 1.5 km	Less than 0.4 km
	Ceiling	More than 500 ft	300 to 500 ft	Less than 300 ft
	Surface Wind	Less than 10 kts	20 to 30 kts	More than 30 kts
	Precipitation	None	Light	Freezing Rain or Hail

CIVILIAN CONSIDERATIONS: "ASCOPE"

Areas: Use OAKOC from civilian perspective. Examples are: areas defined by political boundaries such as districts. Areas defined by social, religious, or tribal boundaries. Locations of governments centers, social, political, religious or criminal enclaves, agricultures and mining regions, trade routes, possible sites for displaced civilian or other civil functions.

Structures: Use SWEAT-MS (sewer, water, electricity, academics, trash, medical, services) also consider bridges, communications towers, power plants, and dams.

Capabilities: : View in terms of those required to save, sustain, and enhance life, in that priority. Can refer to ability of local authorities of the host nation, aggressor nation, or some other body to provide a populace with key functions or services, such as public admin or public safety.

Organizations: Non military, military, militia groups in the AO which influence and interact with the population, the force, and each other. Some are indigenous to the area and may include churches, fraternal organizations, patriotic or service organizations, and labor unions.

People: Describes the non military personnel encountered by military forces. They can impact mission individually or collectively. Consider historical, cultural, ethnic, political, economic, and humanitarian factors. Identify key players and links between groups.

Events: Routine, cyclical, planned or spontaneous activates that significantly affect organizations, people, and military operations. National / Religious holidays, elections, agricultural cycles, celebrations, natural and manmade disasters.

EVALUATE THE THREAT

Enemy Analysis

Another method…

Who

Is attacking? Organizing? Directing?

Examples:
- Military Force
- Nation State Paramilitary Forces
- Insurgent Groups
- Guerilla Units
- Criminal Organizations

What

Are their objectives? Methods? Techniques?

Examples:
- Maneuver Defense
- Area Defense
- Integrated Attack
- Dispersed Attack

When

Do they emplace? Attack?

Examples:
- Day
- Night
- Before/After Clearing

Where

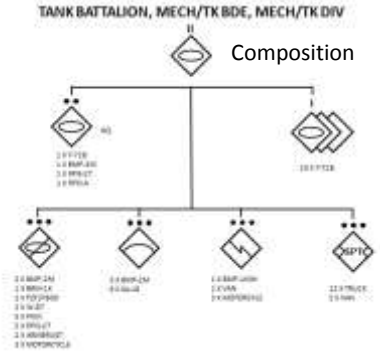
Have they attacked? Will they attack in the Future? Do they store? Assemble? Get Supplies?

Examples:
- Previous Attacks

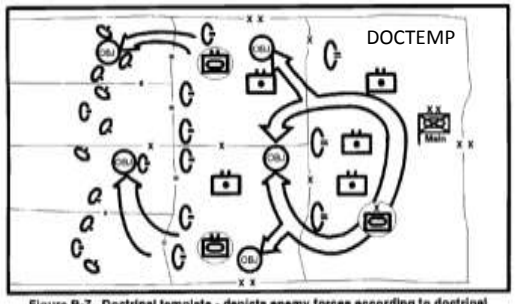
Why

Do they Attack coalition? Locals?

Examples:
- Objective
- Purpose
- Enemy Intent
- Personal Gain
- Money
- Power
- Revenge

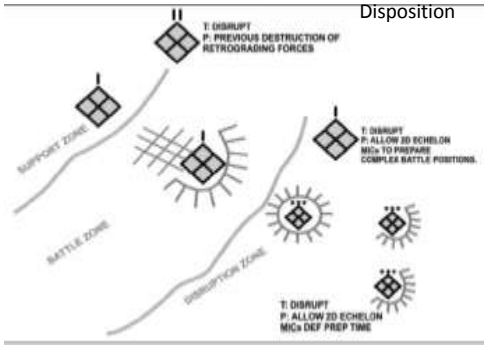


Composition



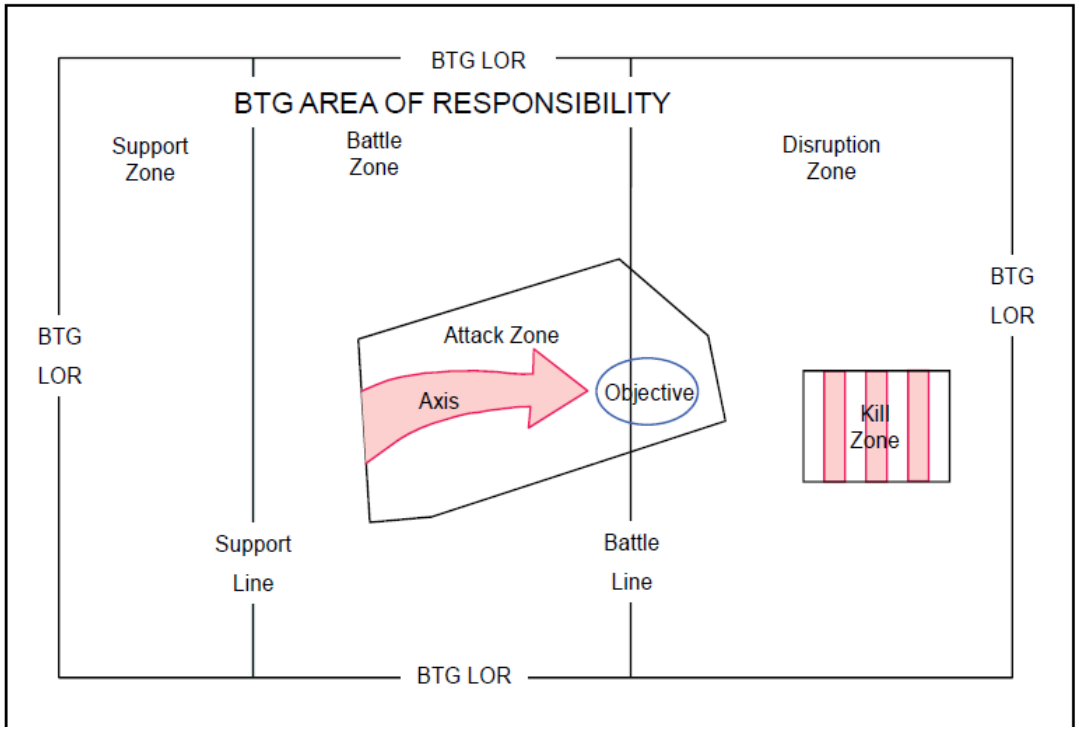
DOCTEMP

Figure B-7. Doctrinal template - depicts enemy forces according to doctrinal deployment, unconstrained by terrain.



Disposition

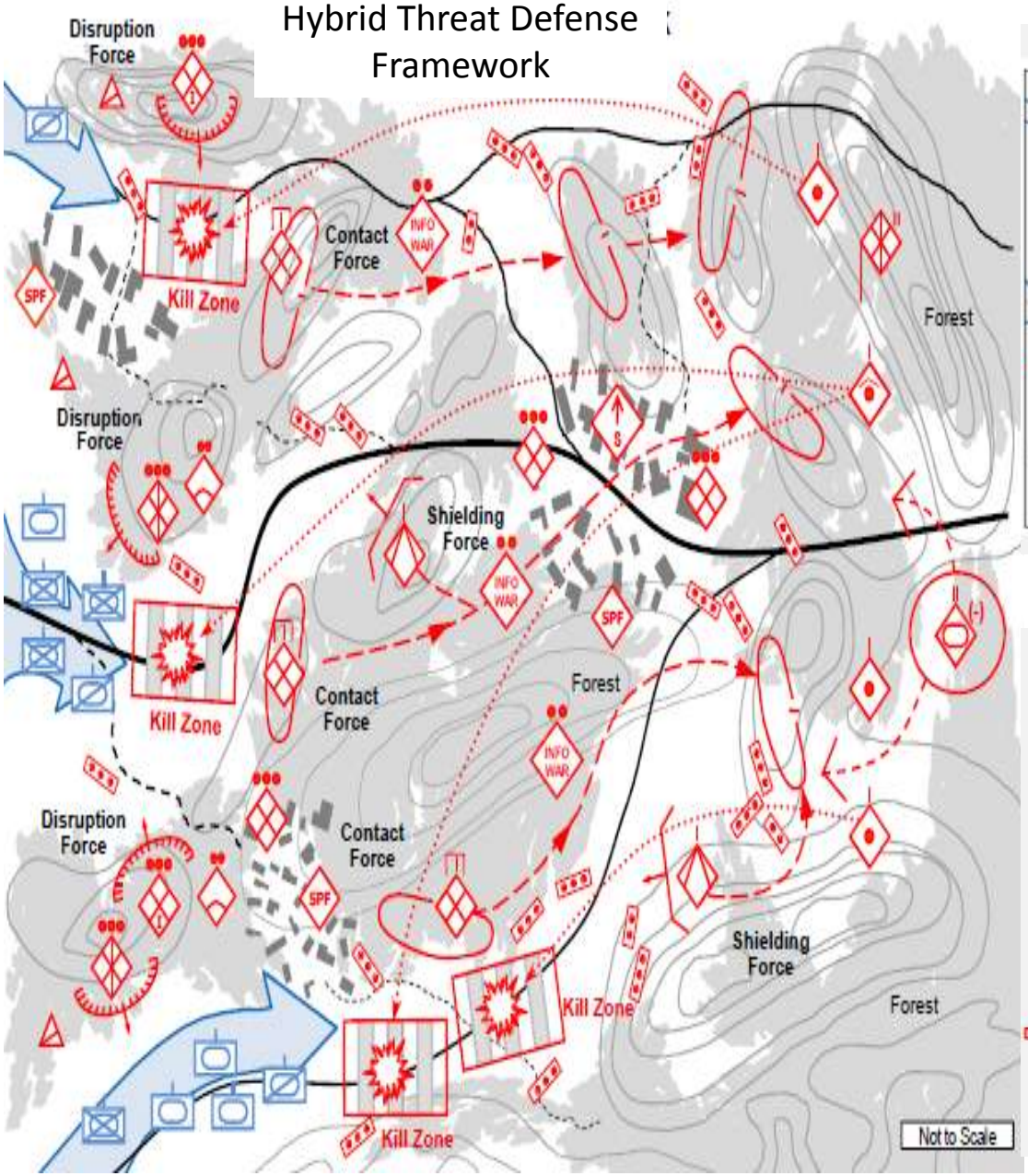
HT TACTICAL BATTLEFIELD

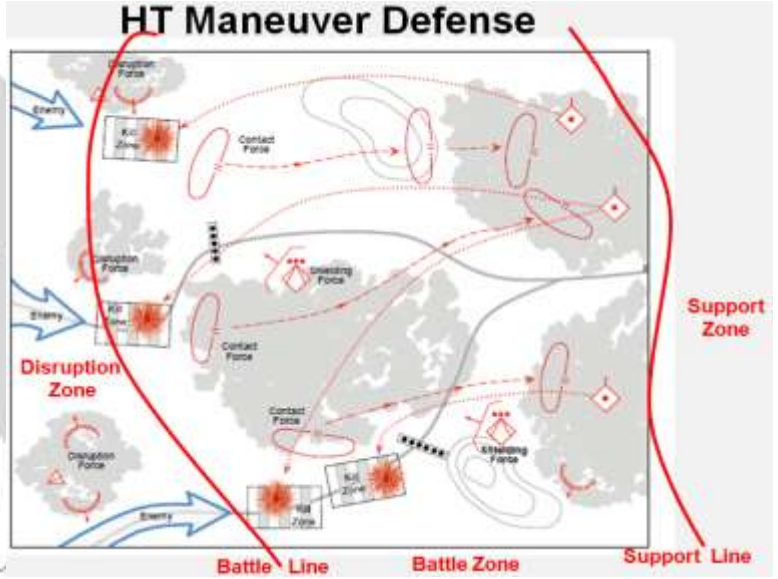


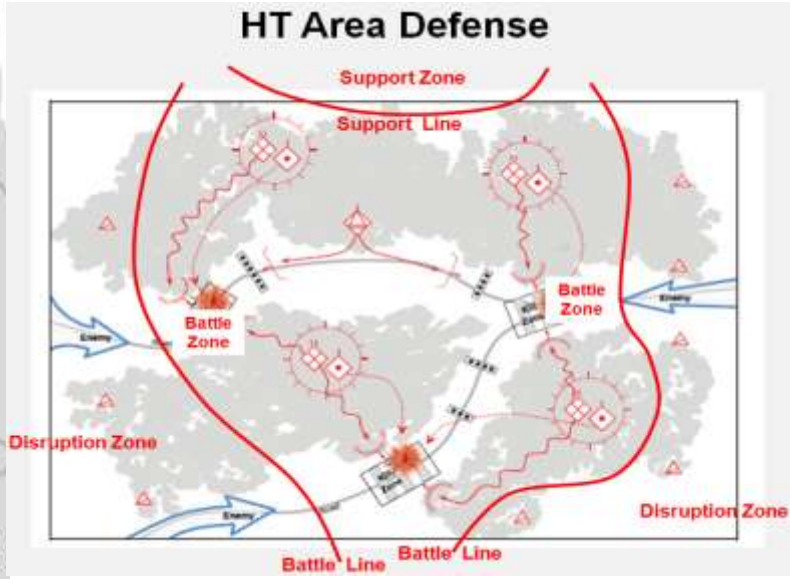
- **Disruption Zone:** The disruption zone is that geographical area and airspace in which the unit's disruption force will conduct disruption operations. It is where the HT will set the conditions for successful combat actions by fixing enemy and placing long range fires on them.
- **Battle Zone:** The battle zone is the portion of the AOR where the HT expects to conduct decisive operations. Using all elements of combat power, the HT will engage the enemy and defeat him in this zone.
- **Support Zone:** The support zone is the area of the operating environment designed to be free of significant enemy action and to permit the effective logistics and administrative support of forces.
- **Attack Zone:** An attack zone is given to a subordinate unit with an offensive mission, to clearly delineate where forces will be conducting offensive maneuver.
- **Kill Zone:** A kill zone is a designated area on the battlefield where the HT plans to destroy a key enemy target.

- **Hybrid Threat Components:** Must be two or more to qualify
  - Military Force
  - Nation State Paramilitary Forces
  - Insurgent Groups
  - Guerilla Units
  - Criminal Organizations
- **Divisions:** In the HT's administrative force structure, the largest tactical formation is the division.
- **Divisions are able to:**
  - Sustain independent combat operations over a period of several days
  - Exert control over an important geographic area or a medium-size urban area (population 20,000 to 100,000)
  - Integrate agency forces up to brigade or group size
  - Serve as the basis for forming a division tactical group (DTG), if necessary
- **Maneuver Brigades:** The HT's basic combined arms unit is the maneuver brigade.
- **Maneuver brigades are able to:**
  - Sustain independent combat operations over a period of 1-3 days
  - Exert control over a small geographic area or a small urban area (population 1,000 to 20,000)
  - Integrate agency forces up to battalion size
  - Serve as the basis for forming a brigade tactical group (DTG), if necessary
  - Fight as part of a division or DTG

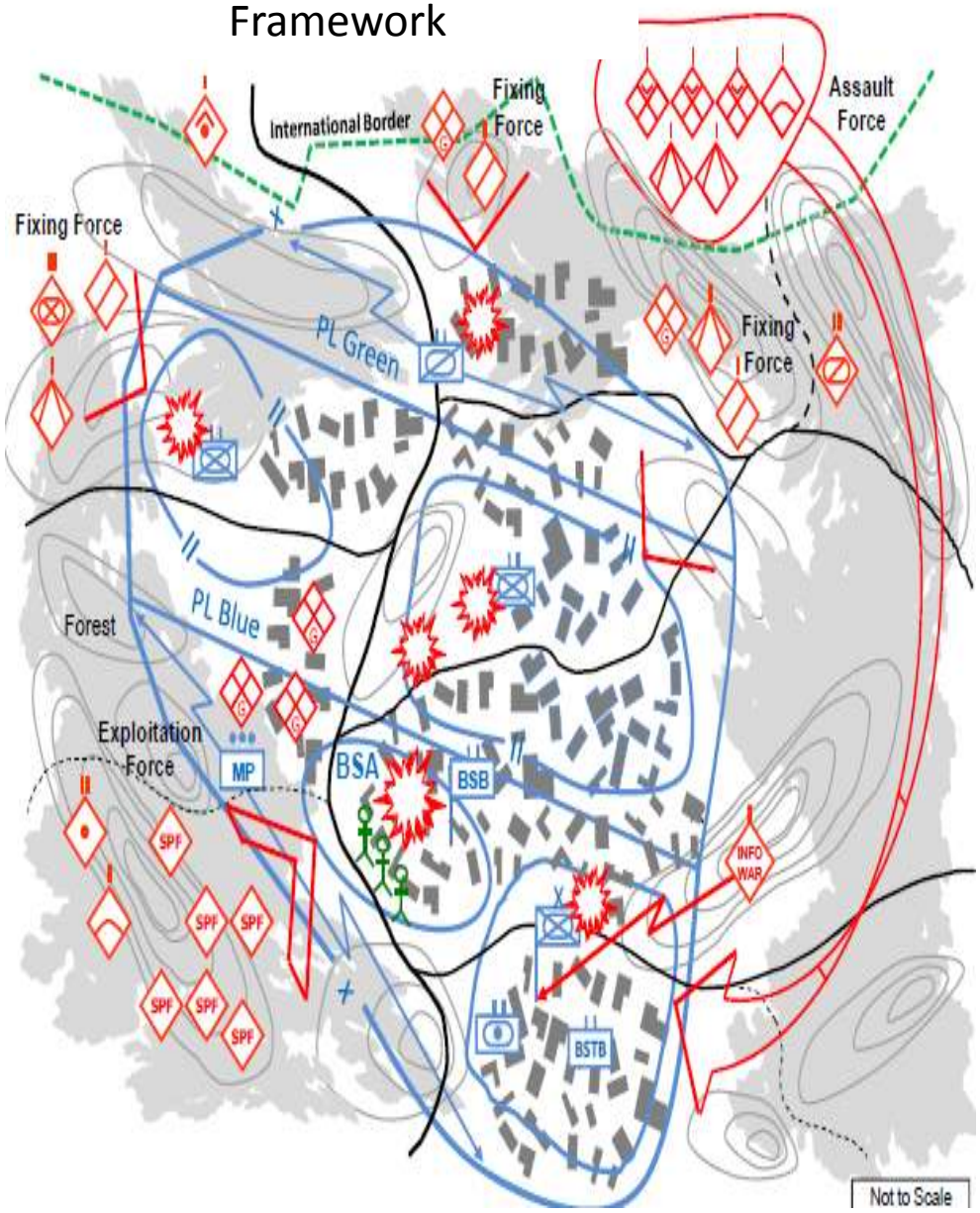
Hybrid Threat Defense Framework



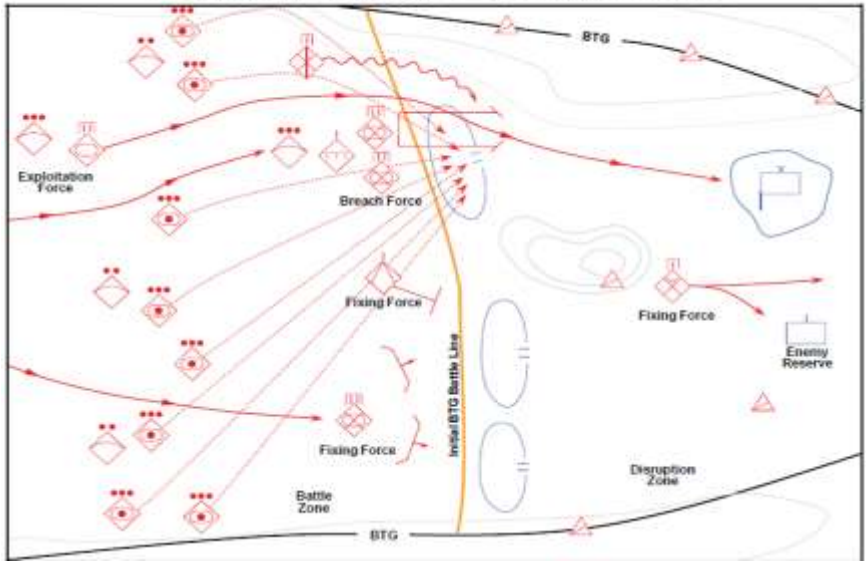




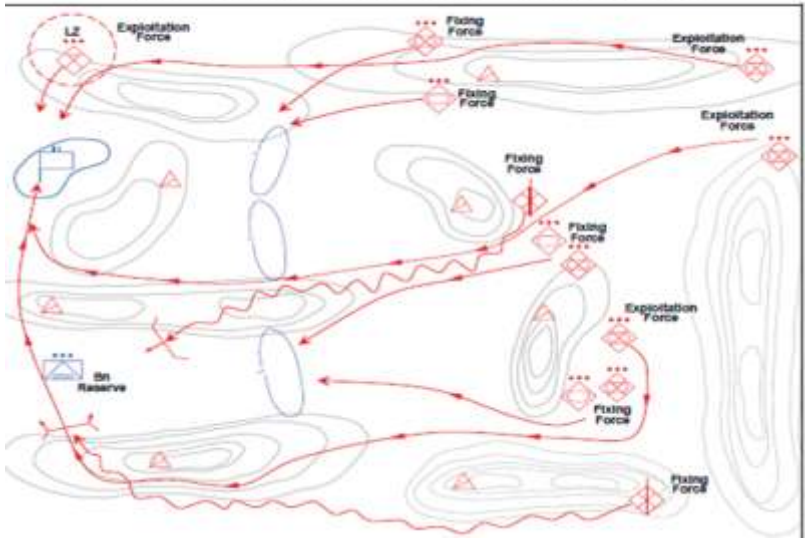
Hybrid Threat Offense Framework



HT INTEGRATED ATTACK



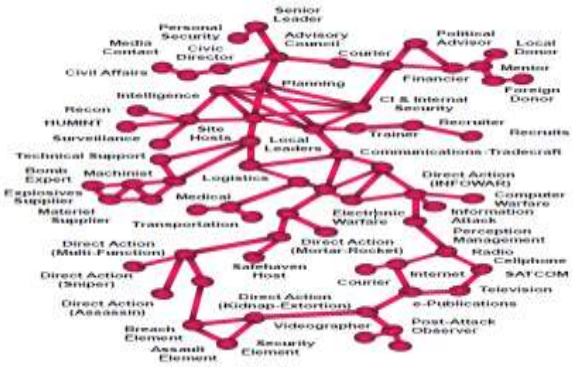
HT DISPERSED ATTACK



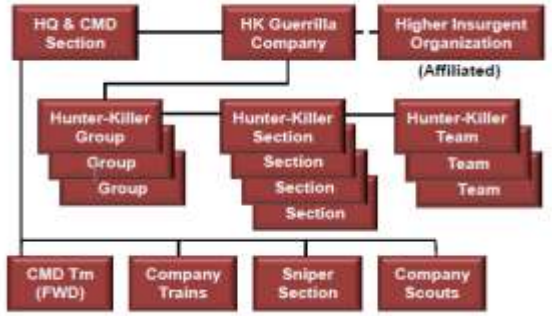
HT TASK ORGANIZING

- The Hybrid Threat tailors its organizations to the required missions and functions.
- It determines the functions that must be performed in order to successfully accomplish its goals. Then it builds teams and organizations to execute those functions without regard to traditional military hierarchy, the law of war, or rules of engagement.
- The HT is a composite of many different groups. These groups will often have no standard, readily identifiable organizational relationship. What brings together the capabilities and intent of the components of the HT is a common purpose, typically opposition to U.S. goals.
- Affiliated organizations are cooperating toward a common goal despite having no formal command or organizational relationship.

- Insurgent organizations have no regular, fixed table of organization and equipment structure.
  - Insurgent organizations is primarily a covert organization; therefore they typically have a cellular, networked structure
  - Insurgent organizations generally do not have some of the heavier and more sophisticated equipment that guerrilla organizations can possess



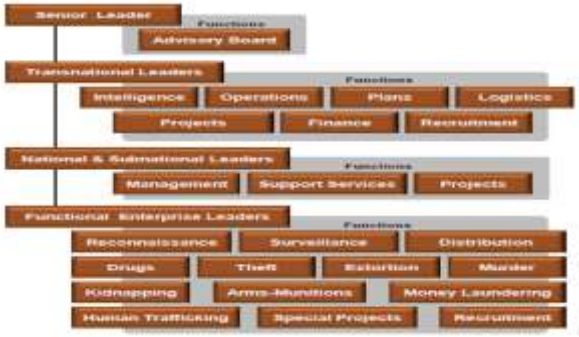
- Guerrilla organizations often reflect a military structure such as a battalion, company, platoon, or squad.
  - Guerrilla organizations may be as large as several brigades or as small as a platoon or independent hunter-killer (HK) teams
  - Guerrilla organizations have some of the same types of weapons as a regular military force weapons, up to and including 120-mm mortars, antitank guided missiles (ATGMs), and man-portable air defense systems (MANPADS)



Criminal organizations are normally independent of nation-state control, and large-scale organizations often extend beyond national boundaries to operate regionally or worldwide.

The weapons and equipment mix varies based on type and scale of criminal activity

By mutual agreement, or when their interests coincide, criminal organizations may become affiliated with other actors, such as insurgent or guerrilla forces



US	
Infantry Bn (M113)	0.71
Infantry Bn (M2)	1.00
Infantry Bn (Light)	0.48
Infantry Bn (Airborne)	0.73
Infantry Bn (Air Assault)	0.70
Armored Cav Squadron	0.85
Armor Bn (M1A1)	1.19
Armor Bn (M1A2)	1.12
105 (t) Bn (M102)	0.80
155 (t) Bn (M119)	0.80
155 (sp) Bn (M109A3)	1.00
155 Bn (M109A6) (Paladin)	1.20
155 (T) Bn (m198)	0.80
MLRS BN	4.60
ATACMS Bn (B-2)	7.50
ATACMS Bn (B-1)	8.80
AKT Helo Bn (24xOH58D)	2.10
AKT Helo Bn (24xAH64)	4.00
AAST, ABN, LT DIV CAV SQDN	0.78
CAV Squadron, Heavy	2.60
Regimental Aviation Squadron	0.91
ADA Bn	0.21
Patriot Bn	0.59
120 mm MTR	0.42
JAVELIN	0.40
ENG Bn	0.48
MP Bn	0.44
MARFOR	
Infantry Bn	0.80
Tank Co	0.30
LAV Co	0.20
AAV Co	0.20
FA Bn	1.50
AH-1 Co	1.00
MEF (Fwd)	5.60

Enemy	
Infantry Bn (BTR-50 / 60)	0.35
Infantry Bn (BTR-70 / 60)	0.60
Infantry Bn (BTR-90)	0.70
Infantry Bn (BMP-1 / 2)	0.65
Infantry Bn (BMP-3)	0.77
Infantry Bn (Light / Air Assault)	0.42
Infantry Bn (Airborne)	0.51
Recon Bn	0.38
AT Bn	0.40
AT Bn (AT Bde / Div)	0.45
AT Bn (IMIBn / AT Regt)	0.21
Tank Bn (MIB 40xT55)	0.34
Tank Bn (MIB 40xT62)	0.38
Tank Bn (MIB 40xT64 / T72)	0.58
Tank Bn (MIB 40xT80)	0.77
Tank Bn (TR 31xT55 / T62)	0.27
Tank Bn (TR 31xT64 / T72)	0.50
Tank Bn (TR 31xT80)	0.64
Tank Bn (T-90)	1.21
Indep Tank Bn (51xT55)	0.44
Indep Tank Bn (51xT62)	0.49
Indep Tank Bn (51xT64 / T72)	0.82
Indep Tank Bn (51xT80	1.05
2A36 Bn	0.86
2A65 Bn	0.84
2S1 Bn	0.71
2S3 Bn	0.85
2S4 Bn	0.45
2S5 Bn	0.88
2S7 Bn	1.02
2S9 Bn	0.42
2S19 / 23Bn	0.90
9A52 Bn	4.50
Bm 21 Bn	2.94
PRIMA	4.50
BM 21V Bn	0.98

COFM

US	

Enemy	
BM 22 Bn	3.50
BM 24 Bn	1.60
D20 Bn	0.77
D30 Bn	0.63
FROG Bn	0.22
M46 Bn	0.78
M240 Bn	0.40
SCUD	0.80
SCUD-B	0.40
22-21Bn	0.60
Hind- D Bn	1.90
HOKUM / HAVOK	2.70
Hind-E Bn	2.05
SA-4 Bn	0.46
SA-6 / 8 Bn	0.11
SA-11 / 12 Bn	0.54
CROTALE	0.54
SA-17 Bn	0.76
S-60 Bn	0.34

NOTES:

1. This table is based on analysis of the units using the M2 battalion as a base unit. It allows for selection and comparison from both columns without regard to type of unit.
2. As a planner, you should develop your own table. The Comparison of relative combat powers should be based on the current intelligence available and experience
3. The Number and quality of the major weapon system in the units listed were used to arrive at the subjective values shown in the table.
4. This table is for CGSC instructional purposed only.

ENEMY WEAPONS SYSTEMS

System	Max Range	Optics	Area/Point	Notes
ZU-23-2	2500	Optical	800/200	2 barrel
ZSU-23-4	2500	Gun Dish	800/200	4 barrel
ZSU-30-2	3800	Hot Shot		
BMP-2	2000	Optical	200/300	1 barrel
M1939	3000	Optical	160/80	
S60	4000	Optical	105/70	used in AT role
	6000	Flap Wheel		
KS-12	8382	Radar	15-20/na	used in AT role
KS-19	13700	Fire Can	15/na	used in AT role
2S6	50000	Hot Shot	500/300	4 barrel & 8xSA-19
BFRS L70	4000	Optical/Radar	300	

System	MER	COAX	COAX	MER	Notes
T54	1500	12.7	7.62	400/600	ATGM
T55	1500	12.7	7.62	500/715	ATGM
PT76	800			260/450	.50
BTR152	1000			650	.50
PTR50P	1500			240	.50
PTR60	2000		7.62	500	.50
BTR70	2000		7.62	500	.50
BTR80	2000		7.62	500	.50
BMP	800	AT3/5	7.62	500	.50
BMD	800	AT3/5	7.62	320	.50
BMP2	4000		7.62	600	.50
BRDM	1000	7.62		500	.50
BRDM2 w/ AT5	2000 4000		7.62	750	.50
MTLB	1000			500	.50
ASU85	750	12.7	7.62	260	LAW
SU100	1500		7.62	300	LAW

Threat Armor						
		T-55	T-62	T-64	T-72	T-80
Armament		100MM 280 HVAP 390 Heat 7.62MM 12.7MM	115MM 280 HVAP 450 Heat 7.62MM 12.7MM	125MM 300 HVAP 475 Heat 7.62MM 12.7MM	125MM 300 HVAP 475 Heat 7.62MM 12.7MM	125MM 400+ HVAP 500 Heat 7.62MM 12.7MM
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)
CBRNE Protection		None	None	CBRNE Filter	CBRNE Filter	CBRNE Filter
Armor	Hull	99	102	200	200	UNK
	Turret	203	242	275	275	UNK
Ford/Snorkel		1.4/5.5	1.4/5.5	1.4/5.5	1.4/5.5	1.4/5.5
Speed (KPH)		50	50	50	60	85
Verticaal Step		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		30	30	30	30	30

Air Defense Missiles

NOM	Effective Range (km)		Guidance	Remarks
	HORIZ	VERT.		
SA-2	35-50	28	Command	Fan Song, Spoon Rest
SA-4	80-100	25	Command	Pat Hand
SA-6	24	12	S/A Radar Homing	Straight Flush
SA-7B	5.5	4.5	IR Homing	
SA-8	12	12	Command	Land Roll
SA-9	6	5	IR Homing	BRDM-2
SA-13	7-May	9.6	IR Homing	Range only Radar
SA-14	6		IR Homing	
SA-16	5			
SA-19	10	7	SACLOS&IR Homing	on 2S6 w/ 4x30mm Cannon

Ground Attack Aircraft

NOM	SPEED (km/h)	RADIUS (km)	CAPABILITIES
MIG-19	1145	700	D
MIG-21	2070	925	D
MIG-27	1800	1200	D
SU-7B	1930	850	D
SU-17	2230	1285	D
SU-24	2230	1530	ABCD
SU-25	855	990	

CAPABILITIES:

A-Air Refuelable
B-All Weather
C-Night Capable
D-Nuclear Capbable

	Mi-2 HOPLITE	Mi-6 HOOK	Mi-8/17 HIP	Mi-24 HIND	Mi-26 HALO	Mi-28 HAVOC	Ka-? HOKUM
Mission	Command / Control Reconnaisance	Transport	Attack Transport ECM	Attack Transport	Transport	Attack	Air to Air
Armament	12.7MM MG 2xRocket PODS	12.7MM MG	12.7MM MG 6xRocket PODS 4xAT-2,3,6 4x250KG Bombs 2x500KG Bombs	12.7MM MG 30MM Cannon 4xRocket POD 4xAT-2,3,6 4x250KG Bombs 2x500KG Bombs	None	30MM Cannon Rocket PODs 16xATGMS AAMS	30MM Cannon AAMS
Crew/ Passenger	1/6-8	5/65	2/24	3/8-10	5/100+	2/None	2/None
Speed (KM/H)	210	300	250	320	300	300	350
Combat Radius (KM)	170	300	200	160	370	240	250

Artillery Rocket Launchers

NOM	CAL (mm)	MAX RNG (km)	MIN RNG (m)	#RNDS	RELOAD TIME (min)	AMMO Type
BM-21 L	122	20	500	40	10	ADGH
BM-21 S	122	11.5	500	40	10	ADGI
BM-24	240	11		12	4	A
BM-27	220	40		16	15	ADFI
ASTROS SS-30	127	30	9	32		ABDKM
SS-40	180	35	15	16		ABDKM
SS-60	300	60	20	4		ABDKM
BM-14	140	9.8	400	16/17	2	AD
RPU-14	140	9.8	400	16	2	ADG
GRAD-1P	122	11.5	3000	1		

AMMO TYPE:

A-HE	D-CHEM	G-SMOKE	J-NUC	M-FUEL AIR
B-WP	E-HVAP	H-ILLUM	K-INCENDIARY	EXPLOSIVE
C-HEAT	F-MINES	I-ICM	L-COPPERHEAD	

Soviet Tactical 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, 3000 KG Bombs, ASMs, Nuclear Weapons	2x30MM Guns, 3000 KG Bombs, ASMs, Rocket PODs, Nuclear Weapons	30MM Gatling Guns, 2500 KG Bombs, ASMs, Nuclear Weapons	2x30MM Guns, 4000 KG Bombs, Rocket PODs, AAMs
Crew/ Passenger	1	1	2	1
Speed (KM/H)	980	1200	1250	475
Combat Radius (KM)	800	700	1800	550

STANDARD RECON / COUNTER RECON DEPLOYMENT OF A MRR (old doctrine)

Mission: Meeting Engagement

•There are two possible meeting engagement battles. SQDN against an Advance Guard (AG) or SQDN against a Forward Detachment (FD). Both the AG and the FD deploy in the same doctrinal march order. However, the AG is force oriented while the FD is terrain oriented.

Element	Time / Distance	Equipment
Ind RECON Patrol	12-18hrs / 100+km	18xDismounts or 3xBDRN-2
Div RECON	3-6hrs / 30-100km	8xBMP 2 (possible SA-16s)
Rgt'l RECON	1-3hrs / 25-50km	4xBMP 2 & 4xBRDN-2 (poss. SA-16s)
BN RECON Plt	15-45msn / 5-15km	3xBMP (indep or team)
CRP (5-3)	H Hour / 5-10km	3 x BMP (may have NBC Tm (BRDM-2) or Eng Tm)
Forward Patrol	+10min / 3-5km	1-3xBMP
FSS	+30min / 5-10km	9xBMP, 7xT80, 1xBNP, (2xAGS-17), 1xBMP (3xSA-16), 1xAVSB, 1xDozer, 1xTank w/ blade
Adv GD BN	+40min / 10-20km	20xBMP, 7xT80, 2xSA-6/8 (Greta), 3xBRDN w/ AT-5, 2xBMP (4xAGS-17), 2XBMP (6xSA-16), 1xCEV, 2xTank w/ blade
Rgt'l MB	1hr / 20-30km	94xBMP, 21xT80, 4xSA6/8 (Greta), 6xBRDN w/ AT-5, 6xBMP (18xSA-16)

IPB – Templates

Situation Template

• Template developed utilizing known enemy locations, historical references, and any available doctrinal information to develop a situational template of possible current hostile/neutral/unknown force dispositions. Depiction of assumed threat dispositions, based on threat doctrine and the effects of the battlefield

• Normally, the situation template depict threat units two levels of command below the friendly force as well as the expected location of high value targets

• Situation templates use time phase lines (TPLs) to indicate movement of forces and the expected flow of the operation

• Prepare as many graphics as necessary to depict the COA in enough detail to support staff war gaming and collection planning

• Tailor the situation templates to your needs by focusing on the factors that are important to the commander or mission area

• A situation might focus only on the treat's reconnaissance assets, depicting details such as location and movement routes of these assets, their likely employment area, and their likely NAIs

Event Template

- **Identifies and analyzes significant battlefield events and activities which provide indicators of enemy courses of action.**
- **By recognizing what the enemy can do, and by comparing it with what the enemy is doing, we can predict what the enemy probably will do next.**
- **Consider not only threat decisive points (DPs), but also threat centers of gravity (COG). Determine where influence / application of effects will result in threats inability to conduct / continue.**
- **Separate Events Templates for each threat - Conventional, Unconventional, Insurgent, Criminal, "Environmental" (ASCOPE / PMESII)**
- **"Was – Is – Gonna Be" Graphic means of comparing the enemy's mobility capability along multiple avenues of approach / mobility corridors**
- **Based on doctrinal rates of movement and battlefield environment, Initial TPL indicated as "H" at enemy FLOT, Assist in tracking actual and potential enemy movement**
- **A guide for collection and R&S planning**
- **Depicts where to collect the information that will indicate which COA the threat has adopted**
- **Differences between the NAIs, indicators, and TPLs associated with each COA form the basis of the event template**
- **Named area of interest (NAI) - the specific point, route, or area where key events are expected to occur; where information that will satisfy a specific information requirement can be collected; usually selected to capture indications of threat COAs but also may be related to conditions of the battlefield**
- **Indicator - positive or negative evidence of threat activity; activities which reveal the selected COA**
- **The initial event template focuses on identifying which of the predicted COAs the threat has adopted**

Decision Support Template

- **Combines the intelligence estimate and operations estimate in graphic form.**
- **Does not require the commander to make a decision, only indicates when one might be required in order to best affect the battle.**
- **Is a combined effort of the S2, S3, ECOORD, S4, and briefed by the S3.**

DEVELOPING A THREAT COURSE OF ACTION

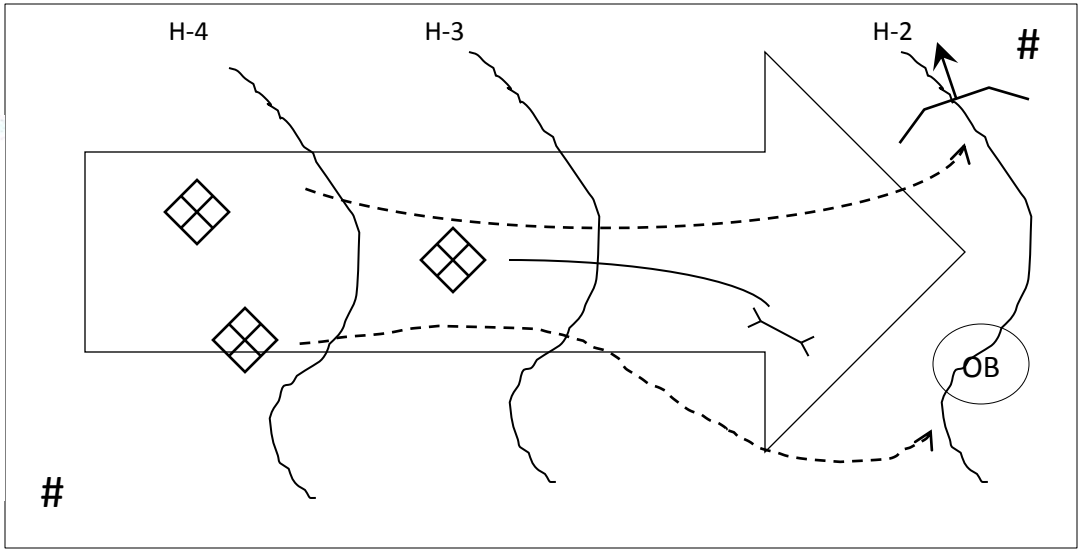
A THREAT COA HAS THREE COMPONENTS:

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 Decisive Effort for that COA
   - •Ensure analysis and graphical representation of all supporting WFF assets supporting that COA

#1 Narrative description of the threat's COA including identification of his decisive point, task, and purpose for the decisive and shaping efforts, purposes of his WFF elements and reserve/CATK forces, and the threat commander's desired end state.

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

#3



The situation template should include the following for mechanized armor-based offense and defense.

In the offense:	In the defense:
• Objectives & LOA. • AAs & MCs. • Recon routes, OP & IEW sites. • Firing lines & direct fire range fans. • Formations & deployment lines. • Artillery targets & range fans. • Artillery & ADA position areas. • ADA coverage. • Attack helicopter routes, BPs & range fans. • LZs. • CAS routes. • Situational obstacles. • Chemical agent targets. • Smoke targets	• BPs & direct fire range fans. • Reserve & hide positions. • CATK routes & firing lines. • Counter-SOPs & counterrecon forces. • Recon routes, OP & IEW sites. • Ambush sites. • Artillery targets & range fans. • Artillery & ADA position areas. • ADA coverage. • Attack helicopter routes, BPs & range fans. • Tactical & protective obstacles. • CAS routes. • Situational obstacles. • Chemical agent targets. • Smoke targets.

TTP: CAR
C: CAS – FW and RW
A: Artillery – FA and MTR
R: Reinforcements – CATK, RES

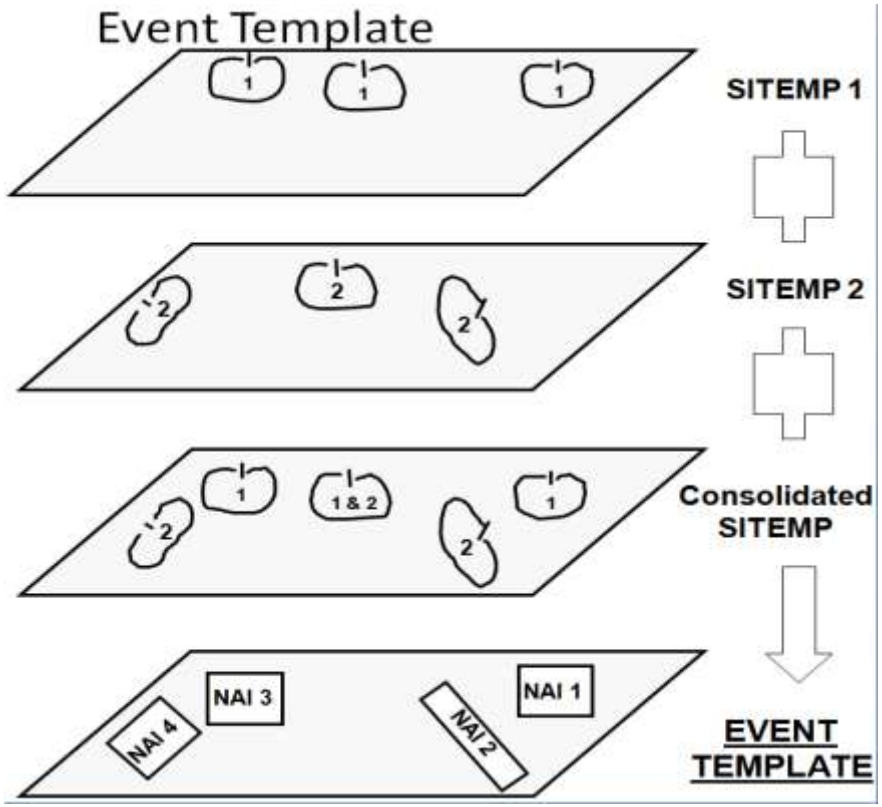
Discuss when and where (Triggers)

Event Template and Matrix

Event Template

•In step 4, the S2 develops enemy COA models that depict the threat's available COAs. He also prepares event templates and matrices that focus intelligence collection on identifying which COA the threat will execute.

•The event template identities the NAI where the activity will occur. The event matrix describes the indicators associated with the activity. Both the event template and event matrix depict the times during which the activity is expected to occur. The details these tools provide are the basis of an effective intelligence collection plan.



Event Matrix

- Its primary use is in planning intelligence collection.
- Supports the event template by providing details on the type of activity expected in each NAI, the times the NAI is expected to be active, and its relationship to other events on the battlefield.
- Provides a description of the indicators and activity expected to occur in each NAI.
- Cross-references each NAI and indicator with the times they are expected to occur and the COAs they will confirm or deny.

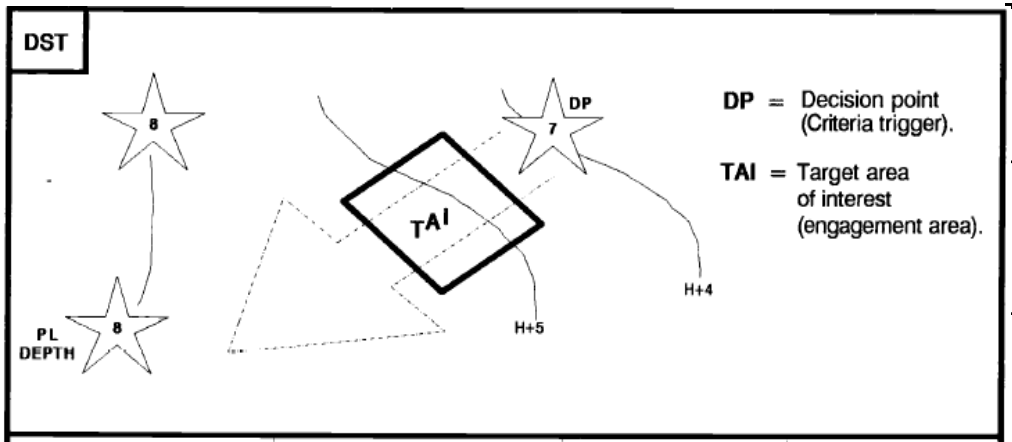
NAI	LOCATION	PIR	INDICATOR	NET/NLT

EN DP	CRITERIA	DECISION	PIR
1	Hill 910 LZ clear	Angel to 910 or shallow vic Iron triangle	2
2	2-1 Fails to secure OBJ Gavin/Lee	ED attack to North or South	1

DP	CRITERIA	DECISION	CCIR
1	Weather	Air Insertion of COLTS / ETAC	
2	Loss of 2 or more COLT teams	Reseed COLTs	FFIR 4
3	Lead Platoon from 2-12 CAV at RP for FPOL	Activate O/O boundary between 2-1 IN nd 2-12 CAV	
4	1-9 CAV makes contact in pass complex with AGMB	1-9 CAV establishes Hasty Defense vic Debnam/Browns Pass.	PIR 6
5	1-9 CAV reaches OBJ BRAGG before the enemy and the enemy continues to attack West	1-9 CAV establishes Hasty Defese vic OBJ BRAGG	
6	1-9 CAV makes contact with the MRR Main Body	Shift POF to 1-9 CAV	
7	Initiate FASCAM vic Bicyle Lake Pass	6 or more tracked vehicles in Bicycle Lake pass	PIR 4
8	ED attacks soluth of Tiefort MTN	Reinforce 1-9 CAV w/ a company from 2-12 CAV and Bring CAS into	PIR 4

Decision Support Template and Matrix

A decision support template is a combined intelligence and operations graphic based on the results of wargaming. The decision support template depicts decision points, timelines associated with movement of forces and the flow of the operation, and other key items of information required to execute a specific friendly course of action (JP 2-01.3). Part of the decision support template is the decision support matrix. A decision support matrix is a written record of a war-gamed course of action that describes decision points and associated actions at those decision points. The decision support matrix lists decision points, locations of decision points, criteria to be evaluated at decision points. A DST uses NAIs and TPLs to depict information requirements. Decision Points integrate NAIs and CCIR by placing a DP on the projected enemy location where the commander expects to review planned options and make a decision. The TAIs depict engagement points or areas where interdiction of an enemy force will reduce or eliminate particular enemy capabilities or cause him to abandon, modify, or adopt another COA. It also lists the units responsible for observing and reporting information affecting the criteria for decisions.



DP		No. 6	No. 7	
Time		H+2	H+4	
Decision Criteria Trigger (Enemy Action)		Enemy defenses extend East past PL DEPTH (in Bn strength or more).	MRR CATK (Tk Co)	
WFF FRIENDLY ACTIONS	Intelligence	UAV to NAIs 21, 22, 23, 24, 25, and 26.	2-9 CAV Collects	
	Maneuver	Shift from Bdes, abreast to Bdes in column on Axis EILEEN.	Attack Helos to TAI 7 AT H+5	
	Fire Support		H+5 DPICM to TAI 7 Jam MRR C^2	

DP	LOC	CCIR	PRI/ALT	ACTIONS	RMKS

EXAMPLES OF DECISION INDICATORS BY WFF

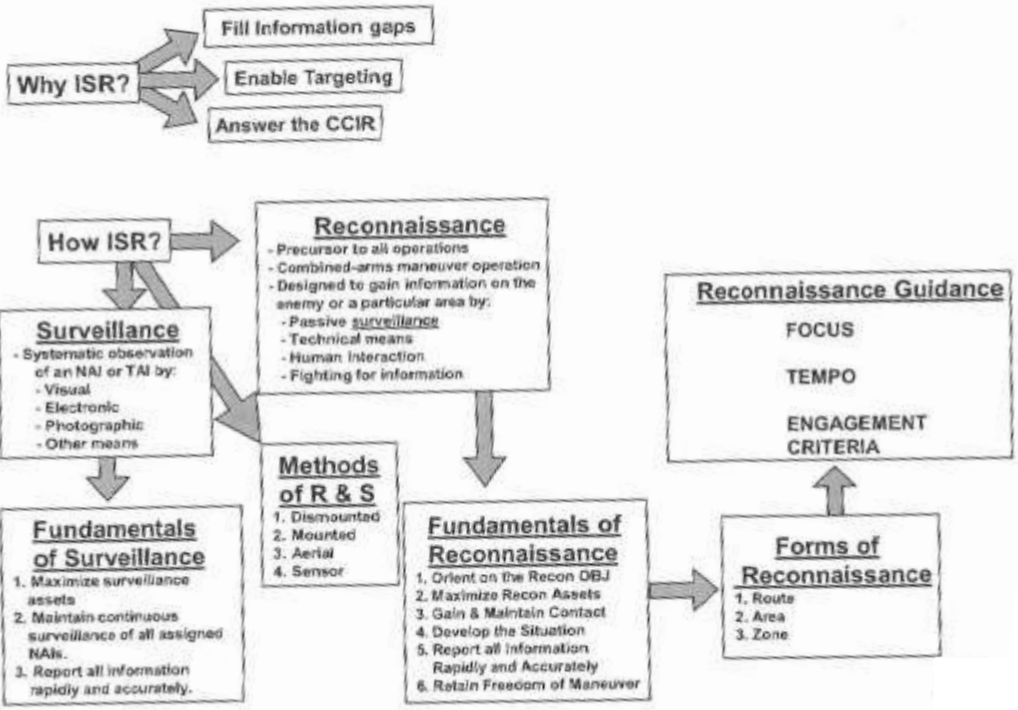
WARFIGHTING FUNCTION	*DECISION INDICATORS*	
Intelligence	•Identification of enemy main effort. •Identification of enemy reserves or counterattack. •Indications of unexpected enemy action or preparation. •Identification of an IR. •Insertion of manned surveillance teams.	•UAS launch. •Identification of HPT/HVT. •Answer to a PIR. •Enemy electronic attack use. •Enemy rotary-wing or UAS use. •Identification of threats from within civilian population.
Movement and Maneuver	•Success or failure of a subordinate unit task. •Success or failure in breaching operations. •Capture of significant numbers of EPWs, enemy CPs, supply points, or artillery units.	•Modification of an ACM. •Answer to an FFIR. •Numbers of refugees sufficient to affect friendly operations. •Damages to civilian infrastructure affecting friendly mobility.
Fire Support	•Receipt of an air tasking order. •Battle damage assessment results. •Unplanned repositioning of firing units. •Success or lack thereof in offensive information operations.	•Identification of an IR. •Execution of planned fires. •Modification of an FSCM. •Effective enemy counterfire. •Identification of HPT/HVT.
Protection	•NBC-1 report or other indicators of enemy CBRN use. •Report or other indicators of enemy improvised explosive device use. •Indicators of coordinated enemy actions against friendly forces. •Identification of threat to base or sustainment facilities.	•Identification of threats to communications or computer systems. •Reports of enemy targeting critical HN infrastructure. •Increased criminal activity in a given sector.
Sustainment	•Significant loss of capability in any class of supply. •Identification of significant incidences of disease and nonbattle injury casualties. •Mass casualties. •Receipt of significant resupply. •Contact on a supply route.	•Civilian mass casualty event beyond capability of HN resources. •Identification of significant shortage in any class of supply. •Aeromedical evacuation launch. •Answer to an FFIR. •Changes in availability of HN support.
Command and Control	•Answer to a CCIR. •Identification of an IR. •Loss of contact with a CP or commander.	•Jamming. •Receipt of a FRAGO or WARNO from higher headquarters.

ACM	airspace control measure	HN	host nation
CBRN	chemical, biological, radiological, and nuclear	HPT	high-payoff target
CCIR	commander's critical information requirement	HVT	high-value target
CP	command post	IR	information requirement
EPW	enemy prisoner of war	NBC	nuclear, biological, and chemical
FFIR	friendly forces information requirement	PIR	priority intelligence requirement
FSCM	fire support coordinating measure	UAS	unmanned aircraft system

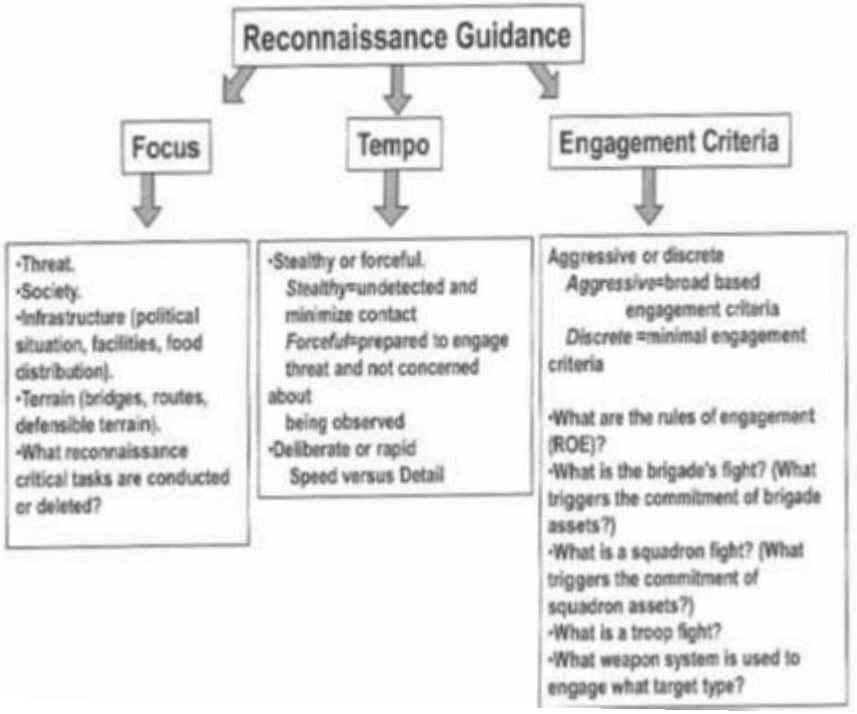
Briefing the Initial IPB - Technique

- Define the battlefield environment. (Initial operations graphics.)
  - Identify significant characteristics of the environment.
  - Identify the area of operations and battle space.
  - Define the limits of the area of interest.
- Describe the battlefield's effects. (MCOO & blowups, as appropriate.)
  - Describe the battlefield's effect on threat and friendly capabilities and broad courses of action (terrain, weather, other).
- Evaluate the threat. (Charts & sketches, as appropriate.)
  - Describe the threat model (doctrinal templates, tactics, HVTs).
  - Describe capabilities (composition, disposition, strength; capabilities and vulnerabilities; recent activities).
- Determine threat courses of action. (SITTEMPs & Event Template.)
  - Identify likely objectives and desired end state.
  - Describe likely threat courses of action.
  - Identify initial collection requirements (NAIs).

ISR OPERATIONS



RECONNAISSANCE GUIDANCE



FUNDAMENTALS OF RECONNAISSANCE

1. Ensure continuous reconnaissance
2. Do not keep reconnaissance assets in reserve
3. Orient on the reconnaissance objective
4. Report all information rapidly and accurately
5. Retain freedom of maneuver
6. Gain and maintain enemy contact with the smallest element possible
7. Develop the situation

RECONNAISSANCE PLANNING

- Three planning considerations unique to reconnaissance operations:
  - –Focus of Reconnaissance: Enemy, Terrain (and weather), Civil Consideration
  - –Tempo of Reconnaissance: Rapid/Forceful or Stealthy/Deliberate
  - –Engagement (both lethal and non-lethal) / Bypass Criteria: Restrictive v. Permissive

RECONNAISSANCE MANAGEMENT

- **Cueing-** the integration of one or more types of recon or surveillance systems to provide information that *directs follow-on collection of more detailed information by another system.*
- **Mixing-** entails two or more different assets collecting against the same IR.
- **Redundancy-** is two or more like assets collecting against the same IR.
- **Task-Organization-** To increase the effectiveness and survivability of a reconnaissance asset, the SCO can task organize it with additional assets from within or outside the squadron.

RECONNAISSANCE PUSH V. PULL

- **Push is used when there is a relative degree of certainty about the enemy situation. Commanders "Push" RECON assets to develop COA**
  - –Area Reconnaissance
  - –Detailed ISR plan developed prior to the deployment of RECON assets
  - –COA is refined/selected through MDMP at the SQDN HQ as data yields relevant combat information
- **Pull is used when there is a great degree of uncertainty about the enemy situation. RECON assets "Pull" commanders toward a COA**
  - –Commander deliberately refrains from committing to a specific plan/COA prior to committing RECON assets
  - –ISR Plan is developed to yield information on the most advantageous way to maneuver the supported organization. The ISR plan will contain decision points to trigger the next step in the planning/execution cycle
  - –RECON is focused on finding enemy strengths/weaknesses that will be critical in formulating the COA. After discovering strengths/weaknesses, RECON Pull "Pulls" the high headquarters maneuver along the path of least enemy resistance to positions of marked tactical advantage.

DETERMINE INITIAL ISR PLAN

- **Identify gaps in the intelligence available and determine an initial reconnaissance and surveillance plan to acquire information based on available reconnaissance assets.**
- **Update CCIR and taskings to reconnaissance as they collect information and other intelligence sources fill in gaps.**
- **Role of BCT, SQDN, BNs in ISR Planning**
- **Initial ISR annex should contain, as a minimum:**
  - **AO for reconnaissance.**
  - **Mission statement.**
  - **Task organization.**
  - **Reconnaissance objective.**
  - **PIR and IR.**
  - **LD/LC time.**
  - **Initial NAIs.**
  - **Routes to AO and passage of lines instructions.**
  - **Communications and logistics support.**
  - **Fire support measures.**
  - **Medical evacuation.**

ISR & MSN ANALYSIS

1) Analyze the Higher HQ's order
2) **Conduct Initial IPB**
3) Determine Specified, Implied, Essential Tasks
4) Review Available Assets
5) **Determine Constraints**
6) **ID Critical Facts and Assumptions**
7) **Conduct Risk Assessment**
8) ***Determine Initial CCIR***
9) **Determine the Initial Recon Annex**
10) Plan Time
11) Restated Mission
12) Conduct MA Brief
13) Approve the Restated Mission
14) Develop Initial Commander's Intent
15) Issue the Commander's Guidance
16) Issue a WARNO
17) Review Facts and Assumptions

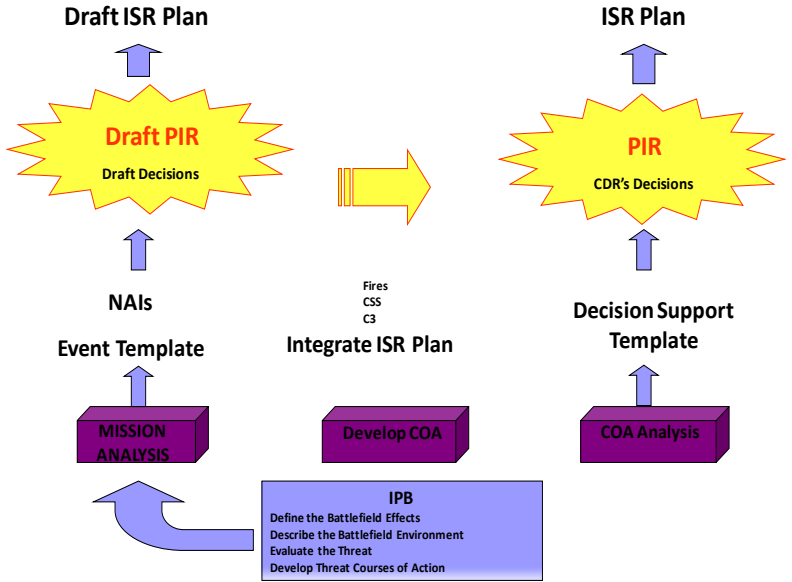
ISR WARNO

ISR Directly Supports

Occurs much earlier now

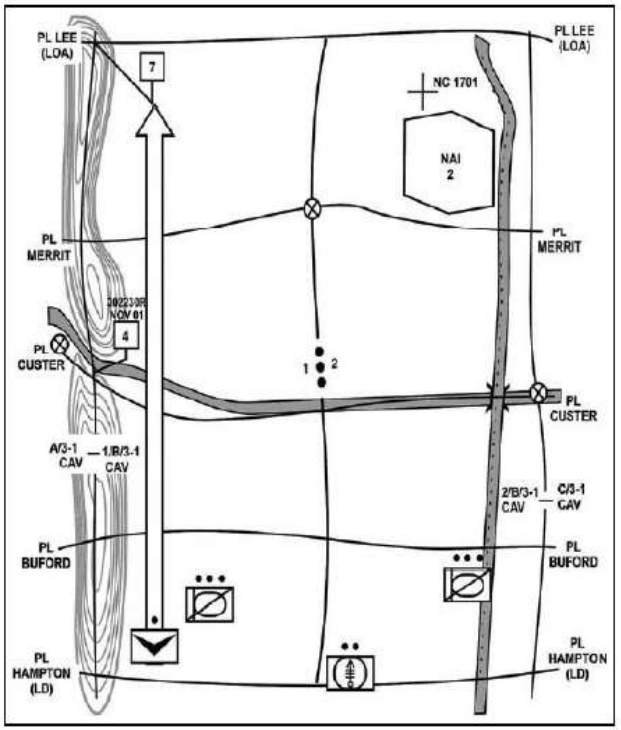
ISR OPORD

ISR &PIR in MDMP

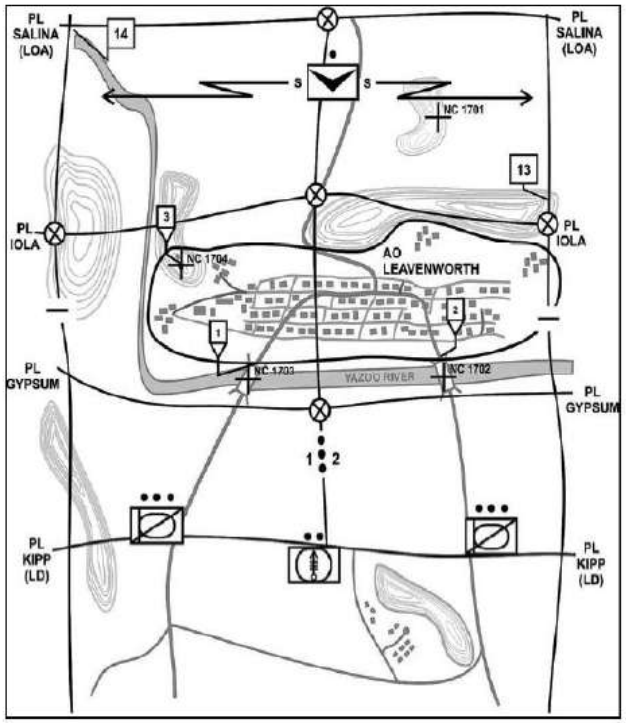


Forms of Reconnaissance

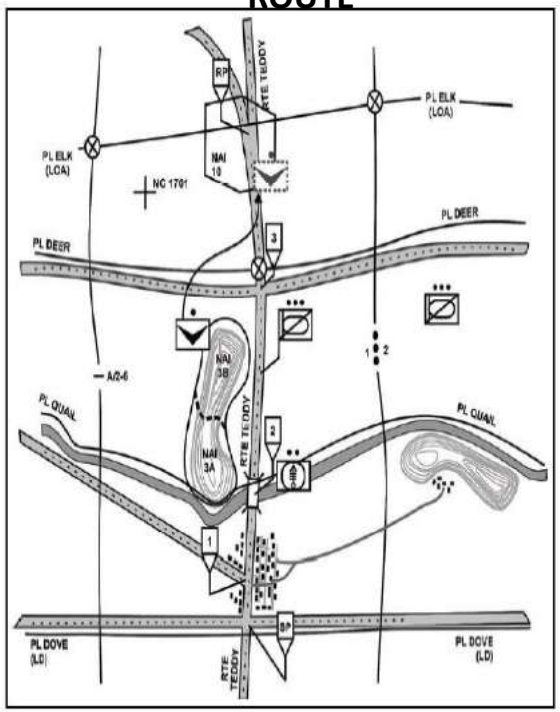
ZONE



AREA



ROUTE



OBSTACLE RECON

- Identify and report the make-up, surrounding terrain, and potential bypass routes of the obstacle in order to allow commander to make decisions to breach or bypass.
- Scout Platoon focuses on supporting breaching operations by providing information such as: fighting positions near obstacle, routes to/from obstacle, terrain, possible enemy positions, and soil composition in/around obstacle
- Scouts must provide location (4 corner grid), length, depth, orientation, composition, type of obstacle, markings, etc.

Forms of Security

Forms of Security

- Screen
- Guard
- Cover
- Local Security
- Area Security

Screen

Provides early warning to the protected force but the least amount of protection of any security mission

Is defensive in nature and largely accomplished by establishing a series of OPs and conducting dismounted and aerial patrols to ensure adequate surveillance

Depth:

Allows for threat contact to be passed from one element to another without displacing

Prevents the treat from easily identifying and penetrating the screen

Prevents gaps from occurring when Ops displace or are destroyed

Facilitates the destruction of enemy reconnaissance elements without compromising critical OPs

Guard

May be offensive or defensive in nature and differs from the screen in that the guard force must fight the threat to gain time and allow freedom of maneuver for the protected force.

A guard is appropriate when: Contact is expected, there is an exposed flank or a threat force to the rear, the protected force is conducting retrograde operations, there is a requirement for greater protection

3 types of Guard Ops: Advance, Flank, Rear Guard

Area security is a security operation conducted to protect friendly forces, installations, routes, and actions within a specified area

Area security is conducted to deny the threat the ability to influence friendly actions in a specific area or to deny the threat use of an area for its own purposes.

Area Security Tasks: Area, route, and/or zone reconnaissance, Screen, Offensive and defensive tasks, Convoy security, High-value asset security

Cover

A form of security operation whose primary task is to protect the main body by fighting to gain time while also observing and reporting information and preventing enemy ground observation of an direct fire against the main body.

Unlike a screening force, the covering force is a self-contained forces capable of operating independently of the main body.

A cover is appropriate when: The situation must be developed earlier with the protected force beyond the range of enemy indirect fires; The protected force requires more time and/or maneuver space than provided by a guard; There are sufficient resources to support both the cover and the decisive operation; shaping operations require deceiving, disorganizing, and destroying the threat force; A tactical pause is required for friendly forces to transition or reorganize.

Operations Process		Joint Targeting Cycle	D3A	MDMP	Targeting Task
Continuous Assessment	Planning	1. The End State and Commanders Objectives	Decide	Mission Analysis	• Perform target value analysis to develop fire support (including cyber/electromagnetic and inform/influence activities) high- value targets. • Provide fire support, inform/influence, and cyber/electromagnetic activities input to the commander's targeting guidance and desired effects.
		2. Target Development and Prioritization		Course of Action Development	• Designate potential high-payoff targets. • Deconflict and coordinate potential high-payoff targets. • Develop high-payoff target list. • Establish target selection standards. • Develop attack guidance matrix. • Develop fire support and cyber/electromagnetic activities tasks. • Develop associated measures of performance and measures of effectiveness.
		3. Capabilities Analysis		Course of Action Analysis	• Refine the high-payoff target list. • Refine target selection standards. • Refine the attack guidance matrix. • Refine fire support tasks. • Refine associated measures of performance and measures of effectiveness. • Develop the target synchronization matrix. • Draft airspace control means requests.
		4. Commander's Decision and Force Assignment		Orders Production	• Finalize the high-payoff target list. • Finalize target selection standards. • Finalize the attack guidance matrix. • Finalize the targeting synchronization matrix. • Finalize fire support tasks. • Finalize associated measures of performance and measures of effectiveness. • Submit information requirements to S-2.
	Preparation	5. Mission Planning and Force Execution	Detect		• Execute ISR Plan. • Update information requirements as they are answered. • Update the high-payoff target list, attack guidance matrix, and targeting synchronization matrix. • Update fire support and cyber/electromagnetic activities tasks. • Update associated measures of performance and measures of effectiveness.
	Execution		Deliver		• Execute fire support and electronic attacks in accordance with the attack guidance matrix and the targeting synchronization matrix.
		6. Assessment	Assess		• Assess task accomplishment (as determined by measures of performance). • Assess effects (as determined by measures of effectiveness).

The Targeting Process

DECIDE

WHAT THREAT TGTs WILL WE ATTACK?(HPTL)

IPB PRODUCTS
- HVT LIST
- ECOA (SITEMP)
- EVENT TEMP/DST (NAIs/TPLs/TAIs)

*TELLs US WHAT, WHERE, & WHEN WE WILL ATTACK

HPT NOMINATIONS FROM STAFF INCLUDED IN MA BRIEF

DETECT

WHAT ACQUISITION ASSETS WILL WE USE TO FIND THE TGT

COLLECTION PLAN ADJUSTED TO INCORPORATE ACQUIRING & TARGETING OF HPTs, BOTH TIME AND SPACE

NAI & TAI MUST BE LINKED TOGETHER
NAI FOCUS IS ON FINDIND HPT
NAI IS A TACTICAL TRIGGER
TAI IS WHERE TO ATK HPT
TAI IS A TECHNICAL TRIGGER

DEVELOP INITIAL TARGET SYNCHRONIZATION MATRIX (TSM) FOR INCLUSION IN R & S FRAGO

DELIVER

WHAT ASSETS WILL WE TASK TO ATTACK THE TGT

1) DETERMINE THE DESIRED EFFECT ON THE TARGET
- DESTROY, NEUTRALIZE, SUPPRESS, HARASS

2) MATCH THE RIGHT FIRE SUPPORT ASSET TO ACHIEVE THE DESIRED EFFECTS

3) REFINE THE ATTACK PRIORITY
- I: IMMEDIATE
- A: AS ACQUIRED
- P: PLANNED

ASSESS

WHAT ASSET WILL WE USE TO ASSESS BDA

1) DID THE ATTACK ACHIEVE THE DESIRED EFFECT?

2) RE-ASSESS THE ENEMY'S CAPABILITIES

PRI	TGT DESC	LOCATION	NAI/TAI	COLLECTOR	DETECTION WINDOW	ASSET	WHEN	EFFECT	ASSET	REMARKS
1	**M/CM/S** MOBILITY ASSETS	GL065654	NAI 10 TAI 10	BN SCOUTS	H +2	ARTY 155MM	I	DESTROY	GSR	
2	**INTEL** DRT BN RECON	GL 123456 GL 654765	NAI 20 TAI 20	MANEUVER	H -12	INF SQD	A	NEUTRALIZE	BN SCOUTS	
3	**FS** RAG	GL 345789	NAI 30 TAI 30	Q-36	H -24	ATK AVN	P	SUPPRESS	BRT	
4	**MANEUVER** T72	GL234985	TAI 40	UAV	H +1	MANEUVER	A	HARASS	MANEUVER	

Targeting Checklist

DECIDE

_____The commander's planning guidance and intent contain enough detail to enable the targeting working group to determine—

•high-value targets (HVT) to nominate as high-payoff targets (HPT)?
•Desired effects on each HPT?
•When to attack each HPT?
•How to attack each HPT?
•Any restrictions or constraints?
•Which HPT requires battle damage assessment (BDA)?

_____What targeting assets (organic, attached, and supporting) are available to detect and attack HPT?

_____What detect, deliver, and assess support is needed from higher headquarters?

_____When must requests to higher headquarters be submitted to obtain the support required?

_____Have target tracking responsibilities been established?

_____Are systems in place to pass the detected targets to assets that are capable of tracking them?

_____What detect, deliver, and assess support is required from subordinate units, and when is it required?

_____What detect, deliver, and assess support requests have been received from subordinate units, and what has been done with them?

_____Has the AGM been synchronized with the decision support template and the maneuver and fire support plans?

_____Are all commands using a common datum for locations? If not, are procedures in place to correct differences in datum?

DETECT (Find, Fix)

_____Does the collection plan focus on priority intelligence requirement (PIR) HPT? (This includes HPT designated as PIR.)

_____What accuracy, timeliness, and validity standards target selection standards (TSS) are in effect for detection and delivery systems?

_____Are all target acquisition assets fully employed?

_____Have backup target acquisition systems been identified for HPT?

_____Have responsibilities been assigned to the appropriate unit and/or agency for detection of each HPT?

_____Are HPT being track?

_____Have verification procedures using backup systems been established where necessary?

_____Are target acquisition and BDA requirements distributed properly among systems that can accomplish both?

DELIVER (Finish)

_____Have communications links been established between detection systems, the decisionmaker, and delivery systems?

_____Have responsibilities been assigned to the appropriate unit and/or agency for attack of each HPT?

_____Has a backup weapon system been identified for each critical HPT? (The primary system may not be available at the time the HPT is verified.)

_____Have fire support coordination measures (FSCM) and/or AGM and clearance procedures been established to facilitate target engagement?

_____Have on order FSCM and/or AGM been established to facilitate future and transition operations?

_____Have potential fratricide situations been identified, and have procedures been established to positively control each situation?

_____Have responsibilities been assigned to the appropriate unit and/or agency for tracking specified HPT and providing BDA on specified HPT?

_____What are the procedures to update the high-payoff target list (HPTL) and synchronize the AGM and decision support template if it becomes necessary to change the scheme of maneuver and fire support as the situation changes?

ASSESS (Exploit, Analyze, Disseminate)

_____Are the collection assets, linked to specific HPT, still available?

_____Have the collection asset management been notified of the attack of a target requiring assessment?

_____Have the assessment asset managers been updated as to the actual target location?

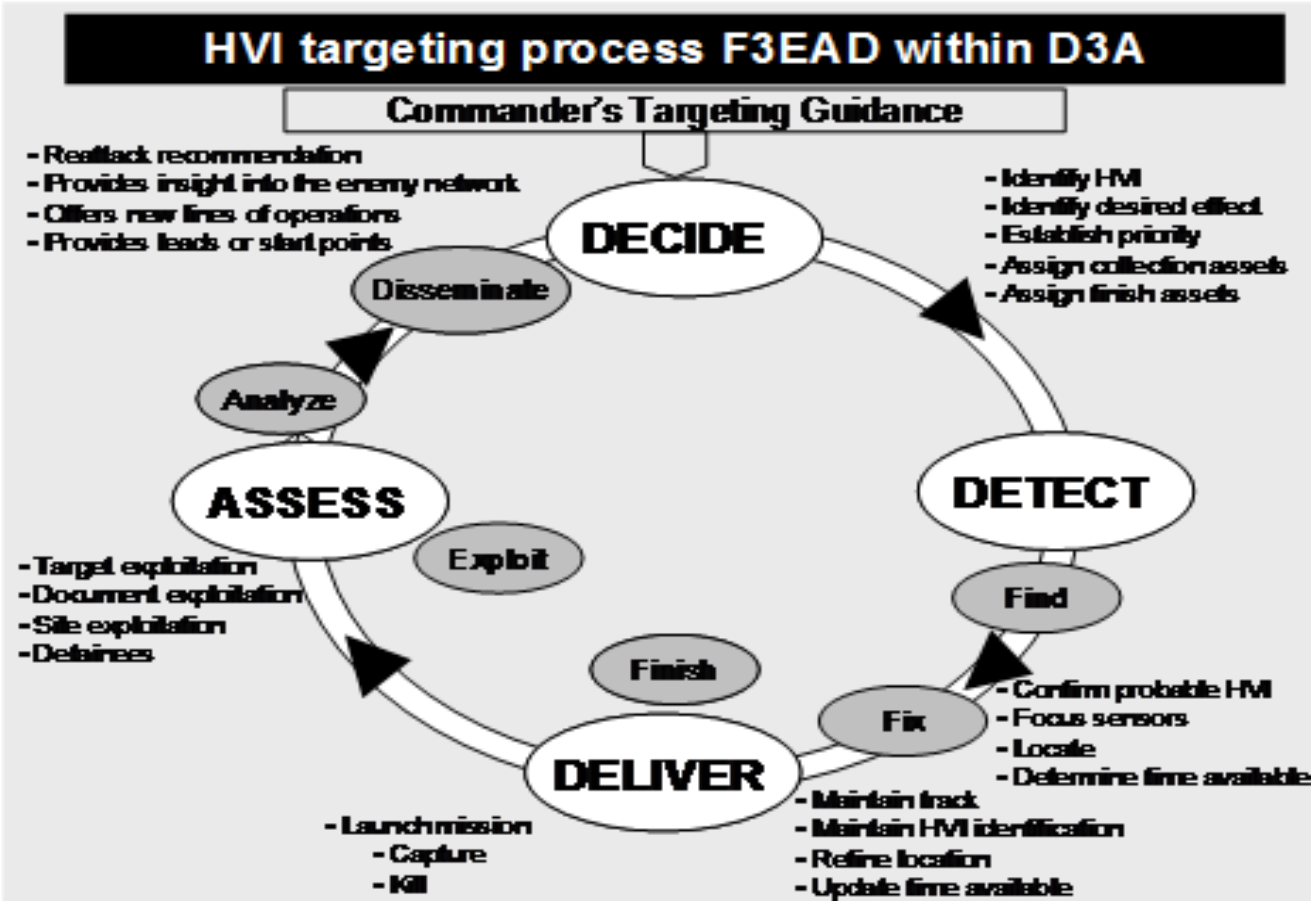
_____Has all coordination been accomplished for the assessment mission, particularly airborne assets?

_____What is the status of BDA collection?

_____Has the information from the mission been delivered to the appropriate agency for evaluation?

_____Has the targeting working group reviewed the BDA to requests for redirection of air assets?

_____Has the target intelligence gathered from the assessment been incorporated into the overall enemy situational development?



Targeting F3EAD **(Find, Fix, Finish, Exploit, Analyze, Disseminate, →)**

Find → Fix → Finish → Exploit → Analyze → Disseminate

Inputs to the find step—
• Commander's guidance and priorities.
• IPB
•Life pattern analysis.
•Collection plans based on the IPB.

Outputs of the find step—
•Potential HVI detected.
•Target folders.
•HVI network identified and analyzed.

Inputs to the fix step—
•Probable HVI.
•Information on the target and the target's network.

Outputs of the fix step—
•Target identification and confirmation.
•Target location accuracy refined
•Determination or estimation of target time characteristics.

Inputs to the finish step
•HVI location within a given time frame.

Outputs of the finish step—
•Target isolated and engaged.
•Target location secured.
•Exploitation force on site.

Inputs to the exploit step—
•Secured target location.
•Targeted questions.
•Site exploitation preparation and SOP

Outputs of the exploit step—
•Documented information.
•Detailed reports.
•Follow on targets for immediate execution.

Inputs to the analyze step—
•Document information.
•Detailed reports.

Outputs of the analyze step—
•Actionable intelligence.
•Correlated information.
•Intelligence assessments.

Inputs to the disseminate step—
•Relevant and correlated information.
•Actionable intelligence.
•Intelligence assessments.

Outputs of the disseminate step—
•Databases, matrices, and assessments are updated.
• Intelligence and information is pushed to higher, lower, and adjacent units.
•Information is made available to everyone with a need to know.

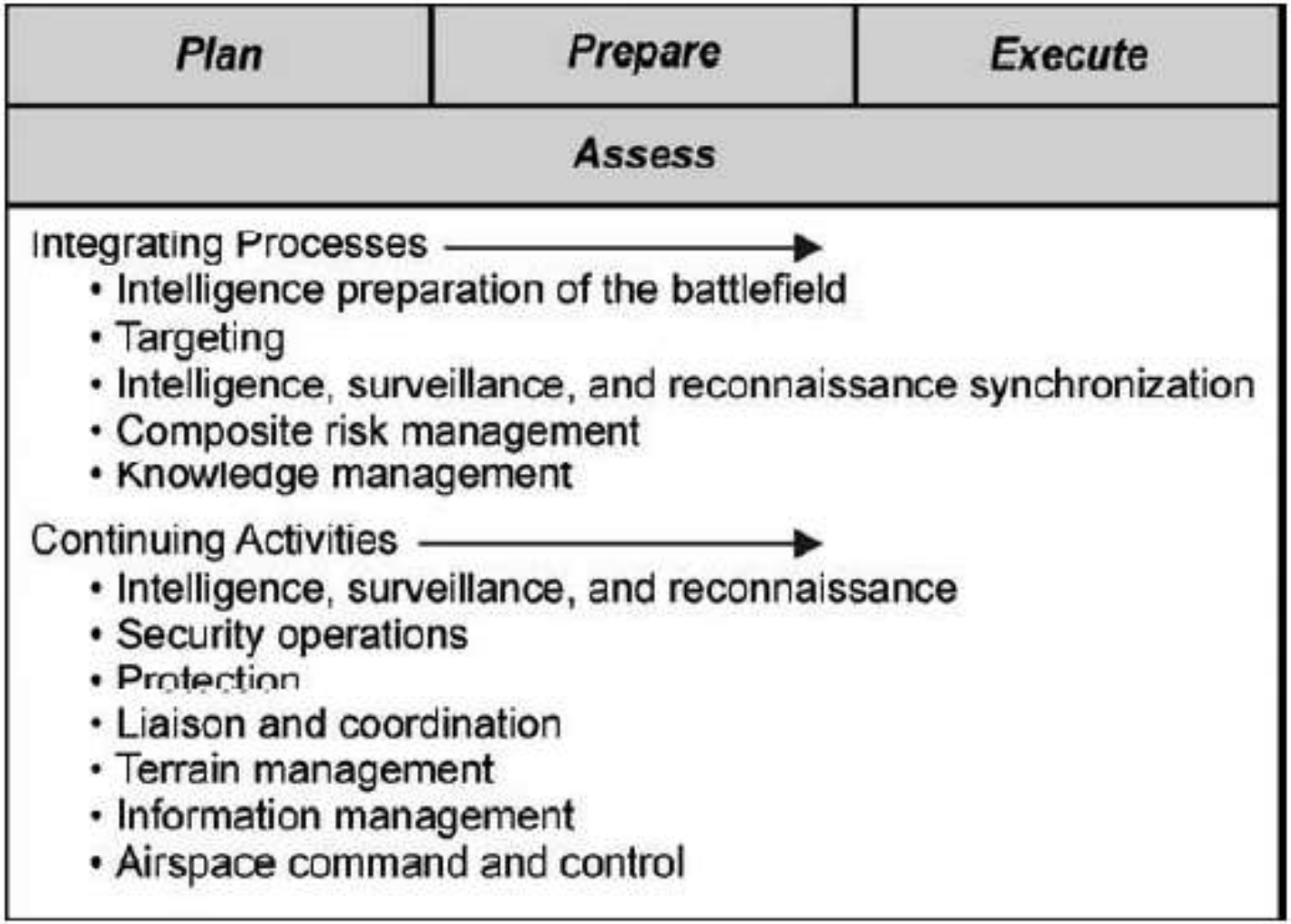


Figure 6-1. Operations process expanded

DECISION MAKING PROCESS: COMPANY AND BELOW

WARNO:

- Type of operation
- General location of operation
- Initial operational timeline
- Reconnaissance to initiate
- Movement to initiate
- Planning and preparation instructions
  - To include planning timleine
- Information requirements (IR and CCIR)

Troop Leading Procedures

TLP STEPS

1. RECEIVE THE MISSION
2. ISSUE WARNING ORDER
3. MAKE A TENTATIVE PLAN
4. INITIATE MOVEMENT
5. CONDUCT RECONNAISSANCE
6. COMPLETE PLAN
7. ISSUE OPERATION ORDER
8. SUPERVISE

Key Planning Concepts

PLANNING

Parallel plan
Limit (assess and manage) risk
Approach–sequencing operations
Nested concepts
Necessary control measures
ISR
Never violate the 1/3-2/3 rule
Go to the end state first–reverse plan

ESTIMATE OF THE SITUATION

- MISSION ANALYSIS
  - Analysis of mission – begins on receipt of mission
  - Terrain and weather analysis – significant effects, enemy and friendly
  - Enemy analysis – develop SITTEMP and para 1A
  - Develop CCIR
  - Troop analysis – available assets, capabilities by WFF
  - Time analysis – BN times, hard times, 1/3,2/3 rule, light data, ect.
  - Civil considerations - ASCOPE
  - Risk assessment
  - Identify tentative decisive point(s) based on conclusions and intuition
  - Develop commander's intent
  - Issue Warning Order

- ANALYZE THE SITUATION DEVELOP COURSES OF ACTION
  - Analysis of relative combat power – determine TTPs, help confirm deny decisive points
  - Generate options
  - Array forces
  - Develop a concept of operations
  - Assign responsibilities
  - Assign responsibilities
  - Prepare COA statement and sketch

- ANALYZE COURSES OF ACTION
  - Hasty war game – detailed only if time allows, rare at company level
  - Methods – Box, Belt, Avenue of Approach

- COMPARE COURSES OF ACTION
  - If more than one is developed and analyzed

- DECISION / COA Selection
  - Issue Warning Order

MTET-TC

MISSION

TERRAIN – OAKOC

ENEMY

TROOPS

TIME—1/3, 2/3

CIVILIAN -- ASCOPE

Purpose of the Op:

- Form of maneuver or defensive technique
- Decisive pt and why
- Unit conducting the decisive op with task and purpose
- Units conducting shaping ops with task and purpose
- Concept of supporting fires
- Endstate

RECONNAISSANCE IS CONDUCTED BASED ON THE TENTATIVE PLAN. INFORMATION DISCOVERED DURING RECONNAISSANCE IS "PLUGGED BACK IN" TO THE ESTIMATE OF THE SITUATION. IT CAN CAUSE A CHANGE OF PLAN OR EVEN A CHANGE OF MISSION.

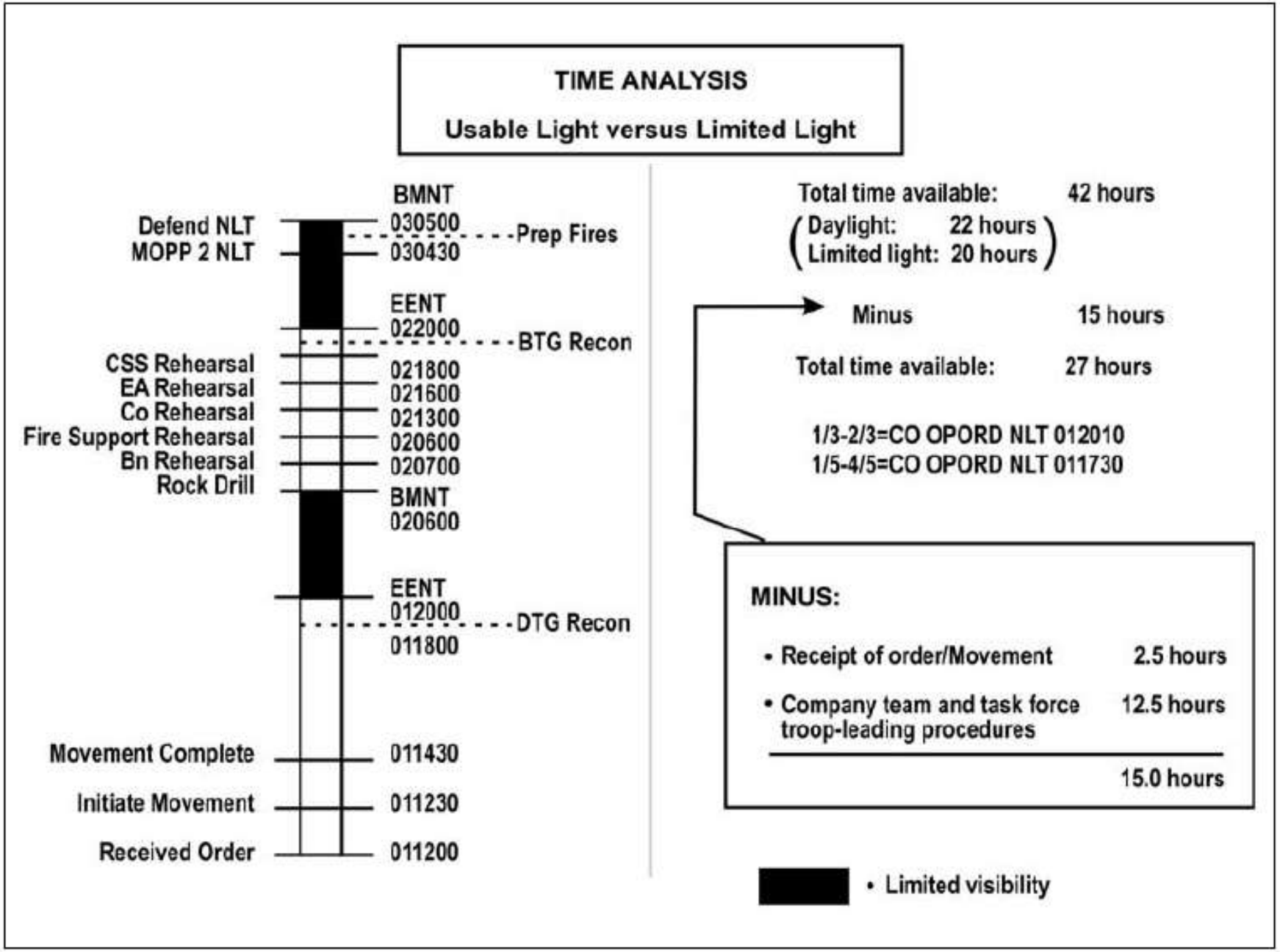


Figure 2-17. Example company timeline.

WARNING ORDER

Warning Orders give subordinates advance notice of operations that are to come. This gives them time to prepare the order should be brief but complete. A sample format follows:

1. Situation
- Enemy Situation
- Friendly Situation
- Attachments and Detachments

2. Mission

3. Execution
- Task to Maneuver Units
    - A. Special teams or task org within the Company
    - B. Special weapons, ammunition, or equipment
- Task to Combat Support Units
- Coordinating Instructions
    - A. Uniform and equipment common to all
    - B. The tentative time schedule is formed on the basis of mission analysis. It includes at least:
- Time and place of OPORD
- Probably execution time
- Inspection times
- Rehearsal times and actions to be rehearsed (E.G. actions at the objective, searches, EPWs, others as time allows)
- Special Instructions
    - A. To subordinate Leaders
        - a. XO
        - b. 1SG
        - c. FSO
        - d. PLATOON LEADERS
        - e. MORTAR SECTION SERGEANT
        - f. ANTIARMOR SECTION SERGEANT
        - g. RTO
        - h. MEDIC
    - B. To persons helping prepare OPORD
    - C. As needed or by SOP

4. Service Support

5. Command and Signal

Acknowledge

FIRST WARNING ORDER: The first warning order follows the five-paragraph OPORD format and includes the following items, at a minimum.

- Type of operation.
- General location of operation.
- Initial operational timeline.
- Reconnaissance to initiate.
- Movement to initiate.
- Planning and preparation instructions (to include planning timeline).
- Information requirements.
- Commander's critical information requirements.

SECOND WARNING ORDER: The company commanders second warning orders include essential information from their mission analyses and additional guidance from battalion. They must understand the information from their highers' second warning orders. They assess the situation as best they can, but can probably complete detailed mission analyses only after they receive the actual OPORDs. Their second warning orders contain the following information from their own mission analyses.

- Terrain analysis.
- Enemy forces (para 1a of higher's OPORD, including enemy SITEMP).
- Higher headquarters' restated mission.
- Higher commander's intent.
- Areas of operation and interest.
- CCIR and EEFI.
- Risk guidance.
- Surveillance and reconnaissance to initiate.
- Security measures.
- Deception guidance.
- Mobility and countermobility.
- Specific priorities.
- Updated operational timeline.
- Guidance on rehearsals.

THIRD WARNING ORDER: The third warning order is normally issued after the COA is finalized. For battalion level and up, that is, units with staffs, this occurs after COA approval. For company level and below, this normally occurs earlier, after COA development or analysis. This warning order contains the—

- Mission.
- Commander's intent.
- Updated CCIR and EEFI.
- Concept of operation.
- Areas of operation and interest.
- Principle tasks assigned to subordinates.
- Preparation and rehearsal instructions not covered in SOPs.
- Finalized operational timeline.

Operations Order

1. Situation

•Task Organization / Terrain and Weather / Enemy Situation / Composition, Disposition, and Strength
•Recent Activities
•Capabilities
•Most probably Course of Action, include sketch or overlay to clarify
•Civilian Situation
•Friendly Situation
•Mission and Concept for the BN
•Mission for Unit on left
•Mission for Unit of right
•Mission for Unit to the front
•Mission for Unit to the rear
•Mission for the BN Reserve
•Mission for any Units supporting the BN if they effect the Company Mission
•Attachments and Detachments. Changes to the task organization during the operation. For example, if the task org changes during the consolidation phase of the attack, it would reflect here.

2. Mission

The mission essential task(s) and purpose(s). It normally includes who, what, when, where, why.ent

3. Execution

Intent. Stated vision, which defines the purpose of an operation; the end state.

•Concept of the operation. This paragraph describes how the CO intends to accomplish his mission. How is described in terms of identifying the man effort, decisive point, arrayal of forces, form of maneuver, and significant factors. At company level, a maneuver and fires subparagraph will always be included. When needed to clarify the concept or to ensure synchronization, additional subparagraphs, such as engineering, EW, intelligence, and counter-air operations, may be included here.
•Maneuver. The maneuver paragraph should be focused on the decisive action. At company level, a maneuver paragraph assigns the missions to each platoon and or section and identifies the main effort.
•Fires. This paragraph describes how fires support maneuver. It normally states the purpose to be achieved by the fires, the priority of fires for the company, and the allocation of any priority targets. A target list, fires support execution matrix, or target overlay may be referenced here.
•Engineering. Often, especially in defense ops, this paragraph is required to clarify the CO's concept for preparing obstacles, mines, and fortifications. When the company is supported by engineer equipment or units, the CO states guidance for employing these assets here. He may do this starting his priority for the engineer effort (survivability, counter mobility, and mobility) and the priority for supporting his subordinates (E.G. 3D PLT, 1SG PLT, Mortar Section, 2D PLT, Anti-armor Section, CP).
•Tasks to Maneuver Units
•Tasks to Combat Support Units
•Coordinating Instructions. May include instructions concerning: timings, movement instructions, PIR/IR/Reporting tasks, MOPP level, Troop safety and OEG, engagement and disengagement criteria, fire control measures, consolidation and reorganization, terrorism/counterterrorism, ROE, contingency plans.

4. Service Support

This paragraph provides the critical logistical information required to sustain the company during the operation.

•General. It provides current and future trains location.
•Materiel and Services. It may have a separate subparagraph for each class of supply as required.
•Casualty Evacuation.
•Miscellaneous.

5. Command and Signal

•Command. This paragraph states where the C2 facilities and key personnel will be located during the operation and adjustments to the Unit SOP, such as a change to the succession of command or the standard wire plan.
•Signal. It provides critical communications requirements such as radio listening silence in effect forward of the LD, signals for specific events or actions, emergency visual signals for critical actions, and SOI information.

Acknowledge. Use the message reference number.

Annexes:

A – Intelligence / Intelligence Overlay(s)
B – Operation Overlay / Concept Sketches
C – As required, such as road march, truck movement, air assault, and river crossing

EXECUTION MATRIX. An execution matrix shows the most critical tasks or event 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 to his subordinates; 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 the 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.

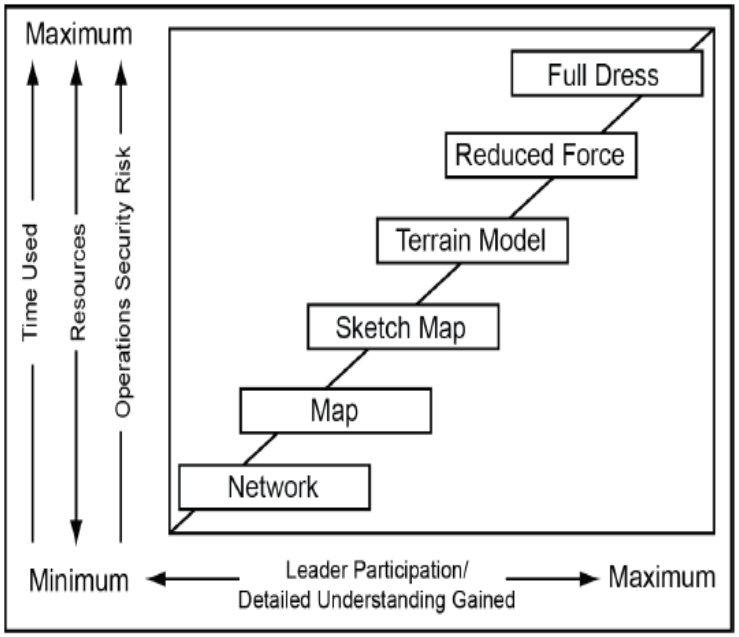
Prompts for possible elements / phases to be used in the matrix are:

Elements: Organic, Attached, Headquarters, Fire Support, Antiarmor, Mortars

Phases: Movement to LD, Crossings, Phase Lines, Assault Position, Actions on Objective, Consolidation, Counterattack, Contingency Plans.

	AA TO LD	PL BLUE	ASSLT POSN	ACTIONS ON OBJECTIVE	CONSOLIDATE REORG'N	CONTINGENCY PLAN I	CONTINGENCY PLAN II
1ST PLT	ORDER OF MARCH: 2	AXIS GOLD	MOVE BREACH TEAM FORWARD	BREACH SUPPORT	360-120 / BP 1		
2D PLT	3	AXIS LEAD	TRP1-TRP2 / SBF 1		120-240 / BP 2		
3D PLT	4	AXIS LEAD	TRP2-TRP3 / SBF 2	TRP3-TRP5 / SBF 1	240-360 / BP 3		
TANK PLT	1	AXIS GOLD		ASSAULT	RESERVE		
ANTIARMOR SECTION	5	AXIS ROCK	TRP4-TRP5 / SBF 3		3200 / BP 4		
MORTARS	AZ OF LAY: 1600 / POSN 1	1400 / POSN 2	1300 / POSN 3	1700 / POSN 3	3200 / POSN 4		
FSO	CFL LD	CFL PL BLUE	GRP A1C		REGISTER FPFs		
HQ	XO WILL MAN PP1	AXIS GOLD	SBF 3		CP ON OBJECTIVE		

REHEARSAL TECHNIQUES



Sand Table Requirements:

• Kit is a portable map set you use to setup a model of the terrain you'll be covering during your mission—from start to finish. It has to have everything you need for every type of mission, as well as additional pieces that help you to model obstacles and terrain features you expect to see.
• Yarn or 550 cord for grid lines: Layout your sand table to cover your current location, Objective, and Consolidation/Reorganization plan. Large enough for all subordinate leaders and WFF leads (FSO, MEDIC, Supply, etc) to walk over.
• Yarn various colors—for roads (improved, unimproved), Routes, AoA, Air Corridors
• Stakes or Large Nails to anchor down the grid lines and yarn
• E-tool to build the terrain—your sand table should be to scale with all major terrain features created (hills, ridgelines, depression, etc..)
• Tiles or Laminated Cards (large enough for all to see) for all GFCM, DFCM, IDFCM,, AA, OBJ, BP, sustainment graphics, etc.. It should have all graphics that you created in your OPORDER and Annexes.
• Couple of cans of spray paint (Black-roads, Blue—water, etc…)
• MRE Boxes can be used to depict buildings, or urban areas
• You can augment with model vehicles/Soldiers, or list units on the tiles
• North Seeking Arrow—laid out on the sand table

Principles of Rehearsals

- Determine attendees, location, and uniform.
- Prioritize events to rehearse.
- Start with generic rehearsals, then conduct mission specific rehearsals after the OPORD is given.
- Attempt to rehearse as many phases of the mission as possible using different rehearsal techniques.
- Rehearse on terrain/under conditions similar to execution.
- Caution using higher's products; not enough detail for subordinate units!
- Rehearse the plan initially, then continue to rehearse contingencies based on 7 forms of contact.

Offense

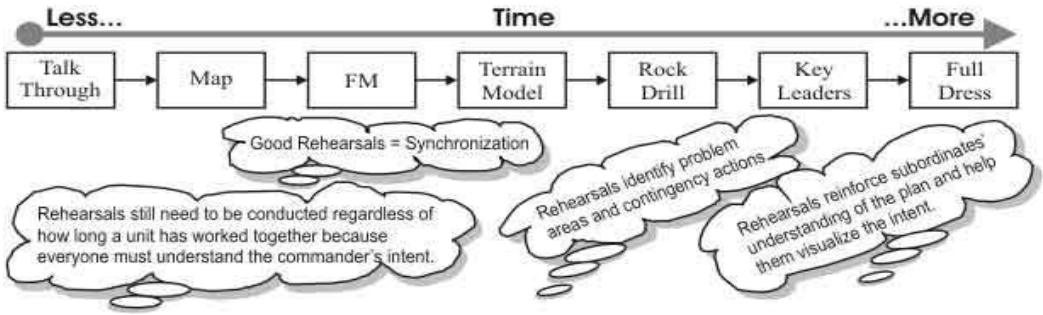
- Actions on the objective (OBJ)
- Breaching
- Movement techniques/formations
- Actions at danger areas
- Movement in a military operation on urbanized terrain (MOUT) environment
- Actions on 7 forms of contact
  - Direct
  - Indirect
  - Mines/obstacles
  - Nuclear, biological, chemical (NBC)
  - Close air support (CAS)
  - Visual
  - Armor

Defense

- Displacement plan
- Counterattack plan
- Security/R-S patrols
- Direct fire plan
  - Direct fire control measures
- Fire support plan
- Trigger points

Types:
Confirmation Brief: Confirms you know higher's plan
Reduced Force (KLR): involves only selected leaders
Full Force: involves entire unit

Types:
Talk Through: orally cover (SOPs) missing expectations
MAP: use a map/overlay to brief the plan
FM: review sequence of events using FM radio nets
Terrain Model: graphically depict terrain/control measures
Rock Drill: subordinates move rock to simulate actions
Key Leader: use key leaders to physically rehearse
Full Dress: entire unit, similar conditions as execution.



PRE-COMBAT INSPECTION (PCI)

Individual PCI Checklist

- ❑ ACH Helmet (IAW BDE SOP)
- ❑ NODs (Mounted, Functional, and Tied down to IBA (IAW BN SOP)
- ❑ Ballistic Eye Protection
- ❑ ID Card / ID Tags
- ❑ Weapon (Zeroed, clean, function test, sling attached properly)
- ❑ Optics (Tied Down, Zeroed, PMCS, Extra Batteries)
- ❑ Lasers (Tied Down, Field Expedient Zero, Extra Batteries)
- ❑ Magazines / 6 ea, 30 rounds per
- ❑ Weapons cleaning kit
- ❑ IOTV/IBA Complete, W/Neck Collar, Throat Collar, Groin Protector, DAPS, ESAPI, Plates, Side Plates, Name Tap, Rank
- ❑ IFAK (See attached inventory list)
- ❑ 1 Quart Canteen at a minimum.
- ❑ MREx1
- ❑ Flame Retardant Gloves. Fingers will not be cut out.
- ❑ Pen / Paper
- ❑ Flashlight
- ❑ Compass
- ❑ Briefed on current mission
- ❑ Extra socks

Leader PCI

- ❑ Graphics/ GRG
- ❑ Communication (IMBTR, Icom)
- ❑ Commo Card
- ❑ Map, protractor, compass
- ❑ Binoculars
- ❑ Sensitive Items List
- ❑ Whistle
- ❑ Alcohol pens
- ❑ Report Formats (9-line, IED/UXO, Vehicle Recovery, SALUTE, BOLO, Patrol Debrief, Combat Patrol Manifest, BDE PCI/PCC Checklist Reference CTB CP SOP Version3)
- ❑ Sector Sketches pre-formated

Patrol Standard (Vehicle)

- ❑ Level I or II Armor (appropriate level)
- ❑ Crew Served Weapon – Mounted w/Ammo can secured
- ❑ Laser and Enhanced Sights (M145, PAS 13) if available
- ❑ Communication Capability (FM, BFT, TACSAT, Cell)
- ❑ Radio Headset - 3ea per vehicle
- ❑ Litter
- ❑ Tow Strap or other Self Recovery Capability (Tow Bar, Chains)
- ❑ Report Formats (9-line, IED/UXO, Vehicle Recovery, SALUTE, BOLO, Patrol Debrief; Reference CTB CP SOP Ver 3)
- ❑ Class III (Oil, Transmission Fluid)
- ❑ Class IV (C Wire)
- ❑ Class V (Basic Load based on weapon system)
- ❑ BII Complete
- ❑ MREs (two case)
- ❑ Water cans x 2
- ❑ Fuel Cans x 2
- ❑ Claims Card / Tip-Line Card
- ❑ VS-17 Panel
- ❑ Chem-light (IR and regular) (3 boxes each)
- ❑ IR Strobe
- ❑ Flame Retardant Blanket (1 per seat)
- ❑ ECM (Functional, inspected, tested)
- ❑ Marcbot (Functional, inspected with extra batteries)
- ❑ Raven (Functional, inspected with charged batteries)
- ❑ TCP Kit (See attached inventory list)
- ❑ EFR Kit (See attached Inventory list)
- ❑ TSE Kit (See attached inventory list)
- ❑ Mortuary Affairs Kit (See attached inventory List)

Radio Inspection

- ❑ Powers up
- ❑ Takes current fill
- ❑ Correct NET ID
- ❑ Correct time
- ❑ Correct power
- ❑ Correct CT setting
- ❑ Radio Check

BFT Inspection

- ❑ Powers up
- ❑ Monitor Operational
- ❑ CPU Operational
- ❑ Transceiver Operational
- ❑ PLGR/DAGER Operational

System Status

- ❑ GPS gum ball G
- ❑ COMM SAT status G
- ❑ User ICON populates
- ❑ Unit ICON populates

Test

- ❑ User role
- ❑ Message to TOC
- ❑ Reply good

PRE-COMBAT INSPECTION (PCI)

AT-4 PCI

- ❑ M 3-23.25
- ❑ Front/Rear runner membrane present, serviceable
- ❑ Transport Safety pin and lanyard present
- ❑ Front/Rear site posts present/spring loaded
- ❑ No cracks or damage in tube body

M203 PCI

- ❑ FM 3-23.31
- ❑ M203 pouches (Molle)
- ❑ M203 cleaning kit
- ❑ Quadrant/leaf site operational

MK 19 PCI

- ❑ FM 3-22.27
- ❑ M3 tripod/gun cover
- ❑ Round extractor/ bore obstruction device
- ❑ Cleaning kit+T-Handle
- ❑ T&E pintle/ MK64/93 with pins/ MOD 9
- ❑ Two acetated range cards
- ❑ MK-19 ammo tray/ feed throat/ brass catcher bag
- ❑ LSAT
- ❑ Ammunition loaded/ stored

Javelin PCI

- ❑ FM 3-22.37
- ❑ Command launch unit
- ❑ Extra battery cooling unit (BCU)
- ❑ Two acetated range cards
- ❑ Sling
- ❑ Rounds
- ❑ Extra batteries
- ❑ Lens paper/rag

TOW PCI

- ❑ FM 3-22.32
- ❑ TAS operational
- ❑ Tripod
- ❑ Traversing unit
- ❑ Launch Tube
- ❑ Fire Control System
- ❑ Command viewer W/cable/5590 BATT
- ❑ Cables/LBB
- ❑ Lens Paper/soft brush/equipment cover
- ❑ TM
- ❑ Two range cards acetated
- ❑ Ammunition loaded/stored
- ❑ Hangfire/misfire procedure card

M2 MG PCI

- ❑ FM 3-22.65
- ❑ PEQ-2A mounted/secured/bore light zeroed
- ❑ Tripod complete/serviceable
- ❑ Spare barrel and bag complete (glove)
- ❑ T&E/pintle present/serviceable
- ❑ Head space and timing gauge
- ❑ Carrying handle
- ❑ Cartridge extractor
- ❑ Blank adaptor installed/tight
- ❑ Weapons cleaning kit
- ❑ Two range cards acetated
- ❑ Ammunition

M240B/ M249 PCI

- ❑ FM 2-22.68
- ❑ M145/PEQ 2 mounted/secured/bore light zeroed
- ❑ Tripod complete/serviceable
- ❑ Spare barrel assembly/case and BII complete
- ❑ T&E/pintle present/serviceable
- ❑ Cartridge extractor
- ❑ Combination tool
- ❑ Scrapper tool
- ❑ Weapons cleaning kit
- ❑ Sling
- ❑ Three sand bags2X100 RND saw assault pouch/1X100 RND pouch (min)
- ❑ Ammunition
- ❑ Two range cards acetated

PRE-COMBAT CHECK (PCC): DISMOUNTED

Patrol Standard : Before

- ❑ IBA , IAW SOP.
- ❑ Night Vision, serviceable, tied down IAW with SOP, extra set of batteries
- ❑ Ammunition: inspected for use, ensure load criteria for mission. Stored properly and check magazines for serviceability
- ❑ Radios: Minimum of 2 forms of communication. Check for serviceability, conduct communications check on all loaded frequencies for mission. Ensure all systems are loaded IAW Commo SOP, for example: CH 1 is BN CMD NET, CH 2 is FIRES, ect.
- ❑ IFAK IAW SOP.
- ❑ Weapon: conduct function check, inspect optic and laser tie downs IAW SOP. Inspect sling for function ability. Extra batteries for optics and or laser.
- ❑ Assault Pack: Markings IAW SOP, Packed according to mission parameters
- ❑ Ruck Sack: Markings IAW SOP, Packed according to mission parameters

Leader Standards :

- ❑ Leader equipment:
- ❑ GPS, functional with correct data,
- ❑ Map with current GRG. Compass, Strobe with extra batteries, Shift Fire signals, Pyrotechniques, Sensitive Items List, Personnel List, Communications Card.
- ❑ Comms : two forms, ensure radio check .
- ❑ All special equipment is inspected and checked for carrying configuration.

EXAMPLES : Breech Kit, Demolition, Mine Detector System, Spotting Scope, PAS-13, Laser Range Finder, Ect…

Patrol Standard : After

- ❑ Inspect IBA , IAW SOP.
- ❑ Clean Night Vision, check serviceable, tied down IAW with SOP, check batteries and ensure extra set of batteries
- ❑ Replace if required your Casualty Feeder Card and Witness Statement Card, check that it is still water proofed
- ❑ Down load Assault Pack: Inspect Markings IAW SOP, repack according to mission parameters
- ❑ Download Ruck Sack: Inspect markings IAW SOP, repacked according to mission parameters
- ❑ Clean your assigned weapon: conduct function check, inspect optic and laser tie downs IAW SOP. Inspect sling for function ability. Extra batteries for optics and or laser.
- ❑ Ammunition: inspected for use, ensure load criteria for mission. Stored properly and check magazines for serviceability
- ❑ Radios: Minimum of 2 forms of communication. Check for serviceability, conduct communications check on all loaded frequencies for mission. Ensure all systems are loaded IAW Commo SOP, for example: CH 1 is BN CMD NET, CH 2 is FIRES, ect.
- ❑ Replenish IFAK IAW SOP
- ❑ All special equipment is cleaned and inspected.
- ❑ Leader equipment: Garmin, functional with correct data, Map, Compass, Strobe with extra batteries, Shift Fire signals, Pyrotechniques, Sensitive Items List, Personnel List, Communications Card.

PRE-COMBAT CHECK (PCC): MOUNTED

Patrol Standard (Vehicle) Before

- ❑ Conduct a ***before*** PMCS (-10) on the vehicle itself.
- ❑ Clean all glass surfaces of dirt and debris including the turn signals
- ❑ Inspect the ***C-Wire*** to ensure it is serviceable and tied down
- ❑ Inspect the gun mount. Ensure the proper mounting bracket for your specified weapon system is present. Ensure your weapon system has all T&E components present.
- ❑ Inspect the weapon , ensure optics are operational and spare batteries are present. If the system uses a spare barrel it is present and serviceable.
- ❑ Check your ammunition. Basic load and cleanliness. Check that your ammunition tray and box are secure. Additional ammunition secured.
- ❑ Secondary weapon system. Present and serviceable. Ensure the ammunition for this weapon is accessible since **Gunners are wearing slick IOTVs**. Check optics and a spare set of batteries for lasers and optics.
- ❑ Check for GUNNER special equipment, EOF laser, PPE, PAS 14 with spare batteries.
- ❑ Binoculars and compass.
- ❑ Turn on radios, inspect mounts, hand mikes, and speakers. Post the PACE and GRG for the mission. Conduct communications check IAW with unit SOP.
- ❑ BFT, ensure start up procedures are done in order. Conduct a BFT check by ensuring your icon and others in your patrol are present. Do a BFT message check.
- ❑ Turn on your ECM to ensure it works.
- ❑ Inspect the LOAD PLAN for your vehicle
- ❑ All Reports IAW C-T-B SOP are present and readable, IED, CASEVAC, RECOVERY,CCA, CAS, PATROL DEBRIEF
- ❑ Inspect the location of equipment . Ensure it is accessible, secured properly and serviceable
- ❑ Insure AID BAG is present and has all required equipment
- ❑ Check for Litter or WALK KIT,
- ❑ Inspect addition ammunition loads for serviceability, accessibility and security.
- ❑ Inspect your fire extinguisher or HALON systems
- ❑ Survival Bag: Check MREs for expiration date and tie down
- ❑ Water, present and secured

Patrol Standard (Vehicle) After

- ❑ Clear all weapons at clearing barrel IAW SOP
- ❑ Patrol Leader will conduct Patrol Debrief IAW C-T-B SOP
- ❑ Turn off all communications systems, ECM and BFT IAW with specific shut down procedures. NOTE: When you turn off the BFT and ECM is IAW with Unit SOP
- ❑ Conduct an ***after*** PMCS (-10) on the vehicle itself.
- ❑ Fill up on petrol, remove all trash and debris
- ❑ All items that were used or damaged are to be replaced.
- ❑ Clean all glass surfaces of dirt and debris including the turn signals
- ❑ Inspect the ***C-Wire*** to ensure it is serviceable and tied down
- ❑ Inspect the gun mount. Ensure the proper mounting bracket for your specified weapon system is present. Ensure your weapon system has all T&E components present. Remove and clean T&E system.
- ❑ Clean and inspect GUNNER special equipment, EOF laser, PPE, PAS 14 with spare batteries.
- ❑ Inspect and clean radios, hand mikes, and speakers.
- ❑ BFT, check for damage and serviceability.
- ❑ Refill and correct any deficiencies to the LOAD PLAN for your vehicle
- ❑ BFT, turn on and check outdated graphics or icons, remove old message traffic.
- ❑ Inspect your ECM to ensure it works, check any information that needs to be given to the EWO (Electronic Warfare Officer).
- ❑ All Reports are present and readable, IED, CASEVAC, RECOVERY,CCA, CAS.
- ❑ Insure AID BAG is restocked
- ❑ Inspect addition ammunition loads for serviceability, accessibility and security.
- ❑ Inspect your fire extinguisher or HALON systems
- ❑ Survival Bag: Check MREs for expiration date and tie down
- ❑ Water, present and secured restock as necessary
- ❑ Clean and inspect Binoculars and compass.
- ❑ Replenish if required: Mortuary Kit
- ❑ BII tool kit: present and secured

PREFIRE CHECKLIST	
Ammunition	• Check all ammunition against TB 9-1300-385. • Inspect the link alignment. • Check for long or short rounds. • Check the cleanliness. (Report and turn in any corroded or damaged rounds.)
M60/M240B Machine Gun	• Make sure the machine gun is cleaned and lubricated IAW TM 9-1005-224-10 (M60) or TM 9-1005-313-10 (M240B). • Make sure the machine gun is installed and secured to the mount. • Make sure the machine gun is clear of ammunition. • Make sure the bore is wiped dry. • Conduct a function check of the machine gun.
M2 HB .50 Caliber Machine Gun	• Make sure the M2 HB machine gun is cleaned and lubricated IAW TM 9-1005-213-10. • Make sure the M2 HB machine gun is secured to the mount. • Make sure the headspace and timing are set. • Make sure the bore is wiped dry. • Conduct a function check of the M2 HB machine gun.
MK 19 40-mm Grenade Launcher Machine Gun	• Make sure the MK 19 machine gun is cleaned IAW TM 9-1010-230-10. • Make sure the MK 19 machine gun is secured to the mount. • Make sure the bore is wiped dry. • Conduct a function check of the MK 19 machine gun.
TOW Weapon System	• Conduct the following missile checks: – Check the outside for soil, dirt, grease, dents, gouges, punctures, and cracks. – Make sure the humidity indicator is blue. – Make sure the electrical connector dust cover is present. – Make sure the forward handling ring and quick-release clamp are present and secured. – Make sure the indexing lugs are not damaged. • Launcher checks: – Inspect the assembled TOW launcher for obvious damage. – Conduct a system self-test (to include collimation) to determine if the launcher will function properly (correct or report any malfunctions). (Refer to FM 23-34 for boresighting and collimation procedures.) – Check DA Form 2408-4 (Weapon Record Data) to make sure the number of rounds fired is recorded.

STEP-BY-STEP MILES BORESIGHTING M1 or M1A1

Setup for Boresight

•Remove X-MTR and clean optics.
•Index APDS.
•Place X-MTR in breech. Ensure tightness.
•Look though sight and ensure it is not blocked by gun.
•Open CCP door and turn power on.
•Push crosswind button and enter 00. Push enter button. Ensure crosswind remains lit.
•Push CANT button, enter 00. Push enter button. Ensure CANT button remains lit.
•Push LEAD button, enter 00. Push enter button. Ensure LEAD button remains lit.
•Push RANGE button, enter 1200. Push enter button. Ensure RANGE button remains lit.
•Open SUBDES door, push SUBDES button, enter 1 on M1 or 59 on M1A1. Push enter and close door.
(The individual setup is now in place and boresighting nay now be done)

Close-In Boresighting

•Send one MILES operations tank with a green key out 400-600 meters from the platoon or company. (MILES boresight should be done at platoon level. The following procedures are for a platoon or a company)
•Have the boresight tank present a frontal target.
•Have the loader look through the MILES sight and talk the gunner to the center mass of target.
•Gunner fires and confirms a kill.
•After a kill is confirmed, the gunner refers his 1200 meter line of the GAS to center of target (APFSDS-T reticle). This is done because it is the most clearly defined point on the reticle. The close-in boresight is now complete.

Intermediate Boresight

•After all tanks in the platoon/company have finished with close-in boresight, send the tank out to 1100-1300 meters.
•Looking though the MILES sight, the loader again talks the gunner to center mass of target.
•Gunner fires and confirms kill.
•Once a kill results, refer the TIS to center mass of tank. The intermediate boresight is now complete.

Boresighting at Longer Ranges

•Once all tanks in the platoon/company are complete, send the tank out to 2000 meters.
•Again, the loader talks the gunner on target.
•Gunner fires and confirms kill.

If all the tanks in the platoon can kill at this range, continue to send the boresight tank out in increments of 200 meters until one tank can no longer kill. Have boresight tank return to last effective kill range. This is the MILES effective range for the entire platoon.

•Again, have loader talk gunner to the center mass of target.
•Push boresight key.
•Toggle reticle of GPS to center mass. Push enter.
•Push zero key.
•Toggle reticle to center mass. Push enter.

The MILES boresight of main gun/coax is now complete

Engaging Targets

During full-up main gun engagement, the computer will compensate for parallax. But, in MILES gunnery, we do not want any computer inputs because the laser “shoots” in a straight line, unlike a main gun round. This is why we boresight at three different ranges.

•When targets are closer than 900 meters, or when engaging with coax, use the GAS.
•When targets are 900-1800 meters away, use the TIS.
•When targets are 1800 meters or more, use the GPS to engage.

CAL .50 Setup

•Ensure transmitter is secured to machine gun.
• Wipe off laser optics with soft cloth.
•Put in a fresh 9V battery and key up transmitter with green key.
•Put in orange key and turn.
•Secure a dry fire cable and hook up transmitter.
•Send a Soldier out 100 meters with a green key and operational MWLD.

Have Soldier stop at that point.

•Refer .50 cal sight. Lay off, then re-lay on Soldier. Stop at that point.
•Confirm that aiming point will result in kill.
•If dry fire cable is not available, live blanks will need to be fired.

LEADER CHECKLISTS for Combat Vehicles:

Vehicles prepared (as per Vehicle Checklist) and METT-TC
Map in every vehicle, CPs on map & GPS with CPs programmed
Fuel and all fluids topped off
Recovery equipment- towbar, jerk straps, slave cables in the section
Breaching equipment as required
COMMEX conducted & SOI information w/ leader and BDE TOC
Everyone attends the patrol order / convoy briefing
Obtain Situation Updates and Brief patrol on:
- Route (trafficability, does it exist, alternates, etc.)
- Current overlay
- Other patrols in AO & frequencies
- Updated mission statement
- PIR
- CDR's intent
- Updated intelligence on enemy situation

Vehicle primary weapons systems operational
Spot check PCI/PCCs by SLs / TCs
BFT system preparations:
- ID all reports (minimum SPOT, 9-line MEDEVAC) that need to be sent to higher HQ
- ID addresses reports need to be sent to
- Create navigation routes (or download routes from next higher if necessary)
- Ensure navigation routes are sent to all other BFTs in patrol/convoy

Hands-on sensitive items check conducted (before and after every patrol)
Conduct QRF-cross coordination and S3:
- Routes and location times
- Call sign and frequency
- Link up procedures

Plan en-route MEDEVAC locations
ID seat belt off point
ID vehicle black-out-drive point
Log routes for future missions to be deliberately unpredictable
Conduct patrol debrief
Prior to movement, report to TOC: # PAX, # Vehicles, Destination, Current Time, and Call Sign
Report all CPs to higher (FM or BFT)
Plan primary, secondary, and emergency routes for ingress and egress
Plan for night operations: Use of NODs, Running lights, Black out drive, Head lights

COMBAT Load Plan Guidelines:

Weapons and Ammunition:
Crew served weapon, mounted and functional
PAS 13 mounted Operational
800 rounds for crew serve (minimum)
Rifle, 5.56mm in gunner's turret
M-136 (AT-4) anti-tank missile
2 Red star cluster
2 Green star cluster
Fragmentation grenades
Smoke grenades
Gunners restraint

Vehicle Mortuary Kit:
2 Human remains pouches
2 Personal effects bags
5 Pair latex gloves
5 Face masks
5 Gowns
2 Bio-hazard bags
2 13-gallon trash bags
2 "Sharpie" markers
10 Shoe tags
Heavy trauma shears

Crew Sustainment Load:
1 Case bottled water x 1 day
1 Case MREs x 1 day
Rucksack or assault pack x # crewmembers

PZ Marking Kit:
Carrying Bag or case
VS-17 Panel
2 Smoke Grenades
6 Chem-Lite Spinners
Strobe Light

Medical Equipment
VS-17 Panel
2 Smoke Grenades
Spine boards with straps
Strobe Light
Aid bags

Element: _____ Leader: _____

Mission:
_____

Timeline	Event	Observer	Remarks
_____	Backbrief	_____	ISF are involved at every step of TLPs
_____	ISF Coord/Planning	_____	Element: _____Leader: _____
_____	Recon / ISR	_____	Type: _____
_____	PLT OPORD	_____	Location: _____
_____	Joint Rehearsals	_____	Type: _____Location: _____
_____	Pre-brief	_____	_____
_____	PLT PCI	_____	Focus: _____
_____	Risk Management	_____	Complete: _____Signed: _____
_____	Patrol Brief	_____	Location: _____
_____	SP	_____	_____

T1: _____
P1: _____
T2: _____
P2: _____

Enablers / Combat Multipliers:
Terp / Fires / TSE Kit / Robotics / BATS-HIIDE / ISR / LRAS / Camera / TCP Kit / Non-lethal / EOF / CA / PSYOP / CMO / IO / PAO / MWD

PIR1:
_____
PIR2:

PATROL BACKBRIEF FORMAT TO CP
PRIOR TO EA PATROL

Patrol Ticket Example

PATROL CALL SIGN :				
Task/Mission:				
Purpose: React to unknown contingincies /				
DTG Patrol SP:		Bumper Numbers:		
Conducted PCC/PCI: YES		T/I Patrol Debrief NLT 1.5 hrs after patrol		
Made Radio Checks: YES	Freqs Monitored:	Patrol Leader Has the Following On-Hand:		
Conucted Patrol Safety Brief: Y		Damage Claim Cards: YES		Detainee Packet: YES
Conducted Patrol Mission/Opertion Brief: YES		Litter O/H: YES		Digital Camera: YES
Received Current Intel & Ops Update: YES		Digital Camcorder O/H: NO		
FBCB2 Test message sent/rec(YES		CLS bags filled: YES		Flex Cuffs O/H: YES
Conducted WPNs Function Check and trained Loading / Clear procedures: YES		EOF Equipment O/H: YES		
Conducted roll over drills: YES		Speaker/Sirens: YES		
		CASEVAC Map: YES		

BUMPER #									
SENSITIVE ITEMS	POSITION	NAME	BATTLE ROSTER #	BLOOD TYPE	M4	OPTIC TYPE	NVG'S TYPE	LASER TYPE	
DAGGER #	TC								
M240B#	GNR								
M2#	DVR								
M249#	DM								
RADIO#									
RADIO#									
MBITR									
PAS13#									
SHOTGUNE#									

BUMPER #								
SENSITIVE ITEMS	POSITION	NAME	BATTLE ROSTER #	BLOOD TYPE	M4	OPTIC TYPE	NVG'S TYPE	LASER TYPE
DAGGER #	TC							
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M249#	DM							
RADIO#								
RADIO#								
MBITR								
PAS13#								
SHOTGUNE#								

Consolidation and reorganization activities.

Consolidation Activities	Reorganization Activities
• **S**ecurity measures include— ▪ Establishing 360-degree local security. ▪ Using security patrols. ▪ Using observation posts/outposts. ▪ Emplacing early warning devices. ▪ Establishing and registering final protective fires. ▪ Seeking out and eliminating enemy resistance (on and off the objective). • **A**utomatic weapons (man, position, and assign principal directions of fire [PDFs] to Soldiers manning automatic weapons). • **F**ields of fire (establish sectors of fire and other direct fire control measures for each subunit/Soldier). • **E**ntrenchment (provide guidance on protection requirements such as digging/building fighting positions).	• Reestablishing the chain of command. • Manning key weapon systems. • Maintaining communications and reports, to include— ▪ Restoring communication with any unit temporarily out of communication. ▪ Sending unit situation report. ▪ Sending SITREPs (at a minimum, subordinates report status of mission accomplishment). ▪ Identifying and requesting resupply of critical shortages. • Resupplying and redistributing ammunition and other critical supplies. • Performing special team actions such as— ▪ Consolidating and evacuating casualties, EPWs, enemy weapons, noncombatants/ refugees, and damaged equipment (not necessarily in the same location). ▪ Treating and evacuating wounded personnel. ▪ Evacuating friendly KIA. ▪ Treating and processing EPWs. ▪ Segregating and safeguarding noncombatants/ refugees. ▪ Searching and marking positions to indicate to other friendly forces that they have been cleared.

Summary of the Type of AAR's

Formal Reviews	Informal Reviews
• Conducted by either internal or external leaders and external observer and controllers (OC)	• Conducted by internal chain of command
• Takes more time to prepare	• Takes less time prepare
• Uses complex training aids	• Uses simple training aids
• Scheduled – events and / or tasks are identified beforehand	• Conducted when needed. Primarily based on leaders assessment
• Conducted where best supported	• Held at the training site

From ADRP 7-0: An AAR is a guided analysis of an organization's performance, conducted at appropriate times during and at the conclusion of a training event or operation with the objective of improving future performance. It includes a facilitator, event participants, and other observers. The AAR provides valuable feedback essential to correcting training deficiencies. Feedback must be direct, on-the-spot and standards- based. AARs are a professional discussion of an event that enables Soldiers/units to discover for themselves what happened and develop a strategy (e.g., retraining) for improving performance. They provide candid insights into strengths and weaknesses from various perspectives and feedback, and focus directly on the commander's intent, training objectives and standards. Leaders know and enforce standards for collective and individual tasks. Task standards are performance measures found in the respective training and evaluation outlines (T&EO) found on the Army Training Network (ATN) and the Digital Training Management System (DTMS).

AARs conducted during training include the same four parts as AARs conducted during operations:

-- Review what was supposed to occur. The facilitator, along with the participants, reviews what was supposed to happen. This review is based on the commander's intent, training objectives and tasks to train. This information is usually found in the operations order or on the training schedule.

--Establish what happened. The facilitator and participants determine what actually occurred during the training event, phase or operation. The leader attempts to gather as many views or perspectives (OPFOR, squad leader, team leader, rifleman, etc.) as feasible and possible. This helps to establish a common understanding and instill operational adaptability. Leaders then understand the complexity of an event and work to solve complex, ill-defined problems quickly.

--Determine what was right or wrong with what happened. Participants then establish the strong and weak points of their performance based on the commander's intent and performance measures. The facilitator guides discussions to ensure maximum input and that it is operationally sound and relevant to the training event.

--Determine how the task should be done differently next time. The facilitator guides the unit in self-determining how the task(s) might be performed more effectively in the future. The unit identifies problems and provides solutions, as well as identifies who is responsible for making the recommended changes. Additionally, the facilitator guides the discussion to determine if there is a more effective way to train the tasks to achieve the commanders' intent.

AAR Fundamentals:

-Conducted during or immediately after each event
-Focus is on commander's intent, training objectives and standards
-Focus is also on Soldier, leader, and unit performance
-Involves all participants in the discussion
-Uses open-ended questions
-Encourages initiative and innovation in finding more effective ways to achieve standards and meet training objectives and commander's intent
-Determines strengths and weaknesses
-Links performance to subsequent training

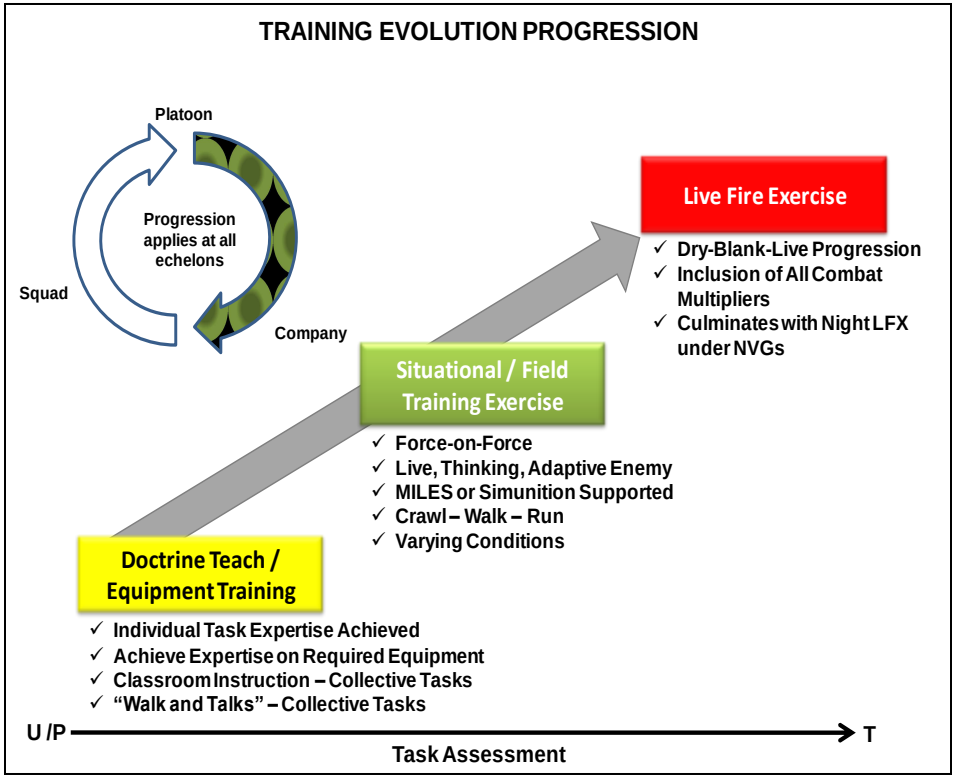
AAR Format:

Review what was supposed to happen:
- State the training objectives and tasks to train
- Review OPFOR (if used) mission and purpose
- Review unit leader mission, intent and concept of operations

Review what happened for a particular event (all levels). A technique is to approach chronologically e.g.,:
- Review actions before first detection
- Review report of first detection or contact
- Review reaction to detection or contact
- Review any FRAGOs, if used
- Review events during engagement

Review what went right and wrong (all levels):
- Review extent to which unit met training objectives
- Review extent that the commander's intent was met
- Have participants summarize the major learning points
- Identify training deficiencies
- Identify unit's ability to perform task and meet commander's intent
- Identify risks and measures employed to mitigate the risks Leader's Guide to After Action Reviews (AAR)

Determine how the event or task should be done next time
- Identify if retraining should occur
- Identify the conditions to modify
- Identify which tasks to retrain to meet the commander's intent
- Identify a more effective way to meet the commander's intent



10 STEP TRAINING MODEL

Step 1 – Training Objectives Based on METL / Battle Drill Assessment
Step 2 – **Plan the Training**
Step 3 – **Train and Certify Leaders**
Step 4 – **Reconnoiter the Training Site**
Step 5 – Issue a Complete Operations Order
Step 6 – Conduct Rehearsals of the Training
Step 7 – Execute the Training
Step 8 – Conduct AARs During and After the Training
Step 9 – Retrain as Required
Step 10 – Personnel and Equipment Recovery

Training Meeting Agenda
There are three phases to company training meetings. They are assess previous training, coordination for upcoming events (T-5 thru T-1), and planning for future events (T-6 & T-7) training. The agenda maintains a focus for all to see, understand, and follow. It should be posted prior to the meeting.
Agenda Items:

Review Last Weeks Training:
•Platoon/subordinate element assessments (collective and Individual tasks, warrior tasks and battle drill training)
•Identify training not conducted
•Update company KCT and MET assessments
•Identify retraining required

Coordination:
•Review FRAGOs (new or updated command guidance)
•Pre-execution checks T-5 thru T-1
•Identify any changes to upcoming events (tasks to train)

Future Planning:
•Review BN/CO training calendar for adjustment
•Provide Cdr's updated planning guidance for events (Adjust training focus of events)
•Demonstrate how platoon tasks support the company collective tasks to train (from the company UTP).
•Review draft training schedule for T-6 & T-7
•Confirm/identify additional resource requirements

Time Requirements
Training meetings should last one hour but not exceed 1.5 hours. There may be occasions when meetings last more than one hour: but these are the exception. The key is for the commander to achieve the meeting objectives as quickly and efficiently as possible.
Recommended Time Line

ACTION	TIME
Review last week's training	15 Minutes
Preparation for T-5 thru T-1 Training	30 Minutes
Future Planning (T-6 & T-7)	15 Minutes

Training Schedule Development
Commanders receive input from all platoons and other elements of the company before formulating the draft training schedule. Because of support limitations or other conflicts, the commander may have to disapprove a training event that a platoon requested or move it to another week (AC) or month (RC). Once all conflicts are resolved, the commander develops a rough draft of the next training schedule. See also Unit Training Management (UTM) on ATN.

Additional Training Meeting Resources:
How-To Conduct Company Training Meetings (ATN Video, runtime: 12:02)
How-To Conduct Battalion Level Training Meeting (ATN Video, runtime: 12:34)
How-To Conduct a Training Meeting (overview) (ATN Video, runtime: 19:49)

What Are Training and Evaluation Outlines (T&EO)?

T&EOs are a summary document prepared for each collective and individual task that provides information on collective tasks, training objectives, related individual training objectives, resource requirements, and applicable evaluation procedures.

T&EOs are comprised of the following elements:

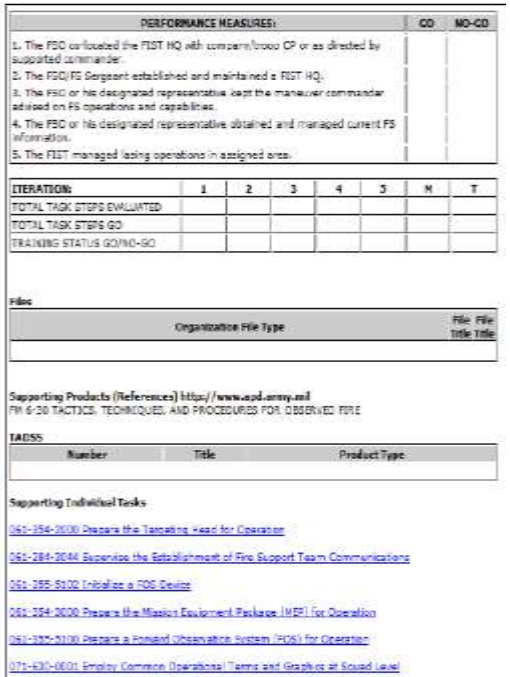
- **Task # and title: A clearly defined and measurable task (collective or individual) accomplished by individuals and organizations. Tasks contribute to the accomplishment of missions or other requirements.**
- **Conditions: The circumstances and environment under which a task is to be performed.**
- **Standards: The minimum acceptable proficiency required to perform the task under the specified conditions (the Army standard for successful completion of the task).**
- **Task Steps: The steps required to conduct the task to the Army standard.**
- **Performance Measures: Performance measures with columns to annotate whether the task as demonstrated is rated a 'Go' or 'No Go' measured against the standard.**
- **Supporting Collective, Individual and Leader Tasks: Any additional tasks that support the primary task.**

During training events, collective and individual tasks are evaluated and assessed as either T - P - U as measured against the Army standard stated in the T&EO. These results are aggregated from section to squad to platoon and ultimately to the Company Commander and First Sergeant at the weekly training meeting. This is called 'bottom-up feedback'. T&EOs are one of the primary sources the company leadership team uses to evaluate the unit's training readiness.

Completing a T&EO

As performance steps and measures are completed, the evaluator takes note of those steps that are correctly completed to the stated standard (or not).

As T&EOs are completed, these results are aggregated by the number of 'Go' tasks to No-Go' tasks. Based on these and the evaluators subjective determination, the overall task will be rated a 'Go/No-Go'.



PERFORMANCE MEASURES:	GO	NO-GO
1. The FSO co-located the FIST HQ with company/troop CP or as directed by supported commander.		
2. The FSO/FS Sergeant established and maintained a FIST HQ.		
3. The FSO or his designated representative kept the maneuver commander advised on FS operations and capabilities.		
4. The FSO or his designated representative obtained and managed current FS information.		
5. The FIST managed lasing operations in assigned area.		

ITERATION:	1	2	3	4	5	M	T
TOTAL TASK STEPS EVALUATED							
TOTAL TASK STEPS GO							
TRAINING STATUS GO/NO-GO							

Files

Organization File Type	File Title	File Title

Supporting Products (References) https://www.apd.army.mil
FM 6-30 TACTICS, TECHNIQUES, AND PROCEDURES FOR OBSERVED FIRE

TADSS

Number	Title	Product Type

Supporting Individual Tasks

- 061-284-3030 Prepare the Targeting Head for Operation
- 061-284-3044 Supervise the Establishment of Fire Support Team Communications
- 061-285-5102 Initialize a FOS Device
- 061-284-3020 Prepare the Mission Equipment Package (MEP) for Operation
- 061-287-5100 Prepare a Forward Observation System (FOS) for Operation
- 071-430-0601 Employ Common Operational Terms and Graphics at Squad Level

Getting to T&EOs from the ATN homepage:

Navigation:

*ATN>Search for Tasks (T&EOs)>

Select>

T&EO

*You can use the following search criteria:

- Task title
- Task number

To access T&EO's from ATN, go to:
https://atn.army.mil

IRON 6 GUIDANCE 10-STEP TRAINING MODEL (1 of 2)

PURPOSE OF THE 10-STEP MODEL:

•To provide a standard method by which leaders may properly plan and execute effective training.

•Leaders **WILL** use the 10-step training model as their template for planning, preparing, executing, and assessing training. There is no difference in this process and the fundamentals of Troop-Leading Procedures / Military Decision-Making Process – use the same techniques for analysis, identification on essential tasks, synchronization, coordination, time management, etc...

10-STEP TRAINING MODEL

1 Identify Training Objectives:

•Must have clearly defined and approved METs and battle tasks; understand the linkage between individual and echelons of collective tasks that support the training objectives; and a solid assessment of the units training proficiency in each these tasks.

•Training strategy must be battle-focused and METL driven. We no longer have the resources of training anything else.

•Develop clear training objectives and a way to measure your progress toward proficiency in a given task (use MTPs, T&EOs, SOPs, etc...)

2 Plan the Training:

"Planning is an unnatural activity, it is much more fun to do something. And the nicest thing about not planning is that failure comes as a complete surprise instead of being proceeded by a period of worry and depression."

•You must conduct your initial time analysis and establish your timeline. Time is the one resource you do not get more of… you must plan with the time available / allotted to you. Use and enforce the standard 1/3 – 2/3 Rule. If you only have six minutes until the mission is to begin, you get 2 minutes to plan.

•Use fundamental planning processes (TLPs and MDMP) to ensure completeness of training plan. Pay attention to details – if you have no idea what you are planning, ask senior leader or refer to publications (FMs, ADPs, TCs, ATN products, etc…). Prepare a complete, 5-paragraph OPORD for the training. In some cases you will need to plan the training, and plan the scenario which will drive the training.

•Use the BCT's Training Event Planning Worksheet to assist in planning. You must understand the cost of the training – a Training Event Cost Estimate Worksheet must be completed. And you must complete Composite Risk Management as part of your planning – risk mitigation measures are captured in your order in the form of Tasks to Subordinate Units or Coordinating Instructions.

•Adhere to planning timelines for Near-Term, Short-Range, and Long-Range Training

Near Term (T-1 to T-6)

a) Training Schedules Approved NLT T-6
b) Training Backbriefs NLT T-4
c) Leader Certification NLT T-3
d) Pre-execution Check / Confirm Resources / Rehearsals NLT T-2
e) Resolve Training Conflicts during T-1

Short Range (T-7 to T-11)

a) Issue Training Order NLT T-7
b) Training Objectives / Training Concept
c) Review Planning Timeline
d) Identify Resources (Personnel / Equipment/ TAADS / RNGs / TAs / Transportation / Class V / Pyro / Supplies)
e) Schedule Backbrief w/ Commander (two-levels up)

Long Range (T-12 & Beyond)

a) Commander's Guidance
b) WARNO for Troop Requirements

** NOTE. You weekly training schedule should never be 100% full – changes will occur. If you plan for 75-80% of you time, you can absorb changes and still conduct planned training (by moving to the open 25% of your schedule). If you do not receive a change to your weekly schedule – the 25% "open" time become time for your subordinate leaders to conduct additional training at their echelon

3 Train & Certify Leaders:

•Focus on your training methodology to execute and develop leaders as superb trainers. Leaders / Trainers must become experts at the tasks they will train their subordinates on. Use doctrine, technical manuals, CALL publications, and SOPs. Do not "make shit up" or allow leaders to perpetuate "bad habits" or incorrect skill execution.

•Identify the key skills that contribute to success, and develop a certification program that validates the proficiency of your leaders. The leader (trainer) must demonstrate expertise in the task he is going to train Soldier on – failure to do this will result in wasted training time.

•Leader training not only ensures the leader knows how to perform the task, it also allows the leader to decide the best way to train the task.

•By training, coaching, and mentoring our leaders, we set them up for success, we shape them professionally, and most importantly, we ensure they achieve the required expertise before standing in front of their Troopers.

4 Recon the Site:

•Reconnaissance allows the leader to determine whether a site is suitable for a specific training event and allows the conditions for the training to be established. Training sites are not just a physical location, but time and weather considerations can be verified as well.

•Walk-thru the training concept on the ground ("Walk-and-Talk"). Identify any training limitations or restrictions, then look for ways to mitigate

IRON 6 GUIDANCE 10-STEP TRAINING MODEL (2 of 2)

5. Issue the Plan:

•Based on the training site recon, complete planning for the training event. Ensure that all elements of the plan of completed – do not forget to thoroughly plan for logistics, and command and signal. Orders must have clear coordinating instructions so that each leader's duty and method is clear.
•The plan will be stated in the form of a 5-paragraph written or oral order — used to transmit information and instructions to subordinates.
•Expressing orders in standard formats containing essential elements, ensures that instructions are conveyed clearly, concisely, and completely.
•Referencing SOP's for tasks often expedites issuance of orders.
•Use the standard OPORD format. Clearly state your intent in a way that is easy to understand, so mission accomplishment is possible in the absence of further instructions

6. Rehearse the Training:

•Helps to ensure maximum effectiveness of training. If leaders can visually conceptualize the task, they will no doubt execute better when the time comes.
•Allows a chance to "work out the kinks" or eliminate any problems that may distract training.
•Well directed rehearsals help Troopers become familiar with what they must do. A good way to rehearse is to have the leader "walk-and-talk" the Troopers through each action. If required, this step may include doctrinal reviews for the Troopers getting ready for field training to maximize "full-up" training.

7. Execute the Training:

•Much of success in this phase depends on the quality of training meetings and whether they address critical issues of execution.
•We must continually emphasize training to standard, not time.
•Allow adequate time between events for preparation of the next event.
•Supervise the training to ensure adherence to standards. Do not be afraid to stop training if tasks are not being executed correctly, conduct an "in-stride" AAR to re-orient, then continue training. Do not let bad training continue
•Submit appropriate reports to your higher HQs as training is conducted. This keeps higher commanders and staff informed on your progress, and assists in predicting any issues so they can be fixed before they impact training.

8. Conduct an AAR:

•The AAR must address "What was supposed to happen…", "What actually happened…", and "Why it happened…". Spend more time discussing the shortcomings on the tasks executed and how to improve skill proficiency. Highlight exceptional execution of task standards and how to sustain. Spend NO time on the construct of the training event (this is for leaders to discuss during training meetings).
•The AAR is critical to task assessment as well as determining what to train next.
•This gives the chance for leaders and Troopers to give valuable input and express their feelings about their proficiency on the tasks trained.
•Be candid and be brutally honest. This is the time to put all pride aside and really discuss what went well and more importantly, what needs to be improved on. Here is the time to do so, you may not get another opportunity

9. Retrain:

•If the unit does not demonstrate proficiency in the designated tasks, they must be retrained. If the training shortcomings were with individual tasks, these must be retrained at the lower level.
•The recertification process of key skills is critical to our progression strategy
•Soldiers need to understand that substandard performance and failure are unacceptable and they will be retrained. We owe it to them as leaders.

10 Recovery of Equipment and Personnel:

•Planning time to conduct complete PMCS on all equipment is essential to the 10-step training model. Following complete recovery, then personnel are released and begin focus on subsequent training events.

Training Checklist

Step 1: Training Objectives Based on METL/Battle Drill Assessment

Step 2: Plan the Training.

1. Who will receive this training (number of soldiers)?
2. What is the objective of the training?
3. Where will the training be conducted?
4. When will the training be conducted?
5. Why is this training being done?
6. Is there a hands on portion of the training? If not, is there a way to add a hands on portion?
7. What resources are required to conduct the training (class V, class IV, table, chairs, TASC items, water, pens/paper)? Reference Enclosure 2 – Pre execution checklist
8. When do you need the resources by?
9. Which trainer is responsible for picking up the resources and where/when will they pick them up?
10. Have you turned in your resource request to your company or battalion representative?
11. Are there any conflicts on the training schedule with this training?
12. Is the risk assessment complete? Is there any special safety equipment needed?
13. What communications equipment is needed?
14. How will the training be evaluated?
15. Are there enough copies of the evaluations on hand?
16. Has coordination been made for the following:
    Transportation:
    Medics/CLS:
    Class I/III/V:
    Weapons:
    Other equipment:
17. What is the uniform for training?
18. Have you completed a STX package as illustrated on ATN?

Step 3: Train and Certify Leaders

1. What are the appropriate FM and or TM's?
2. What are the appropriate page numbers and paragraph numbers?
3. What are the:

Task:
Conditions:
Standards:

4. Are there other tasks that can be integrated into the training?
5. Who are the instructors/demonstrators and what portion are they responsible for?
6. Have they reviewed the reference material and prepared their class/handouts?
7. Have they rehearsed their class?
8. Have they "pitched" their class to the platoon sergeant/platoon leader or company commander/1SG?
8a. Has the PL/PSG scheduled a brief to the BN CDR?
9. Is the concept sketch/handout/butcher block paper portion approved?
10. Is their presentation approved? If no, what do they need to correct and when will they re-brief the appropriate leader for approval?

Step 4: Reconnoiter the Training Site

1. Have you made coordination to do a recon (range control, other units currently occupying the site)?
2. Have you coordinated for transportation in order to do the recon?
3. What is the uniform for the recon?
4. What is the route to the training site?
5. Have you given a safety brief and convoy brief prior to departing on the recon?
6. What is the grid to the training site?
7. Is the site adequate to conduct the training? If not, coordinate for another site.
8. Produce a concept sketch of the site layout prior to departing. Ensure all appropriate areas are listed and the flow of the training clearly depicted.

Step 5: Issue a Complete Operations Order. Issue the handouts, evaluation checklists, concept sketch, tactical order, STX package and risk assessment to the trainees as appropriate. Issue out during the appropriate training meeting.

Step 6: Conduct Rehearsals of the Training.

1. Trainers continue to rehearse their classes along with their assistant instructors until they can give it from memory utilizing notes only.
2. Are all supplies on hand and is all coordination complete?
3. Are all PCI's complete on all equipment, resources, and soldiers?

Step 7: Execute the Training.

1. Transport all supplies and resources to the training site a minimum of one hour prior to the start of training.
2. Is the set-up complete and do you have radio communications if required?
3. Are guards required to secure the equipment over night?
4. Execute training. Brief soldiers and conduct hands on instruction as appropriate. Allow time for soldiers to practice and then conduct the evaluation portion of the training.
5. Have all soldiers signed in?
6. Collect sign in rosters and evaluation sheets. Spot check to ensure they are filled in correctly. Turn in training documentation to the company 1SG and commander for historical files and the S3 shop if needed.
7. Prior to departure: Account for all men, weapons, and equipment.
8. Collect all lesson plan material to include this checklist in put in historical files for use in the future.
9. Conduct recovery and turn-in all signed out equipment.

Step 8: Conduct AARs During and After the Training

1. Trainers conduct an AAR focused on how to improve areas of the training and sustain the areas that were done to standard.
2. Each trainer gives a minimum of one sustain and one improve.
3. Turn in a memorandum to the S3 and company commander with issue, discussion, and recommendation on areas that need to be improved.

Step 9: Retrain as Required

1. Identify soldiers who require retraining. Schedule time and resources to complete training.
2. Schedule additional training or incorporate this task into other training events in order to stay within the "training band of excellence."

Step 10: Personnel and Equipment Recovery

Training Schedule Development

Week T-6
- Based on assessment, identify collective and Soldier task
- Prepare draft training schedule (platoon leaders, sergeants, squad leaders, and team leaders provide input)
- Submit requests for TADSS, training areas, and other requirements
- Request Class I, III, IV, and V
- Begin pre-execution checks

Week T-5
- Finalize and approve training objectives (the commander)
- Confirm support requests
- Identify trainer rehearsal requirements
- Resolve and eliminate training distracters
- Provide Soldier tasks for integration (key NCOs)

Week T-4
- Sign and lock in training schedules; post in company area
- Lock in resources
- Identify and brief trainers and assistant trainers on responsibilities

Week T-3
- Begin Rehearsals
- Ensure distracters are under control

Week T-2
- Fight hard to stop changes
- Intensify rehearsals and preparation periods
- Conduct back Briefs
- Begin gathering training aids and supplies

Week T-1
- Complete pre-execution checks
- Obtain training aids
- Complete rehearsals
- Stop changes to scheduled training
- Brief Soldiers on training

Week T
- Conduct pre-combat checks
- Execute training
- Conduct AARs

MISSION COMMAND PROCESS

Receive Report / Information / "Recognize Changing Condition"

Staff Member Confirms Info / Completeness of Report

TOC OIC
- CCIR Screening
- Update Running Estimate
- Decision for Notification / Increase Response Posture

Higher HQs Guidance
Planning Guidance from Higher HQs

TOC / SDO
Update CDRs Estimate / Initial Guidance

Routine

CCIR

Inform / Alert
- BCT CDR
- CSM
- XO
- S3
- Affected Units

COP

TOC Current Ops

Reports / Orders

DSM | LOG / SIGACTS | CONOP

Reporting
- Higher HQs
- Adjacent HQs
- Subordinates

Disseminate Orders
- Brief Cmd & Staff
- Issuance of Orders
- Notify Adjacent / Higher

Staff
Provide Planning Details

MDMP
- MA
- CDRs Guidance
- COA Develop
- COA Brief
- Wargame
- Decision Brief

Battle Tracking Charts

LNOs

Units / Organizations

Orders Production

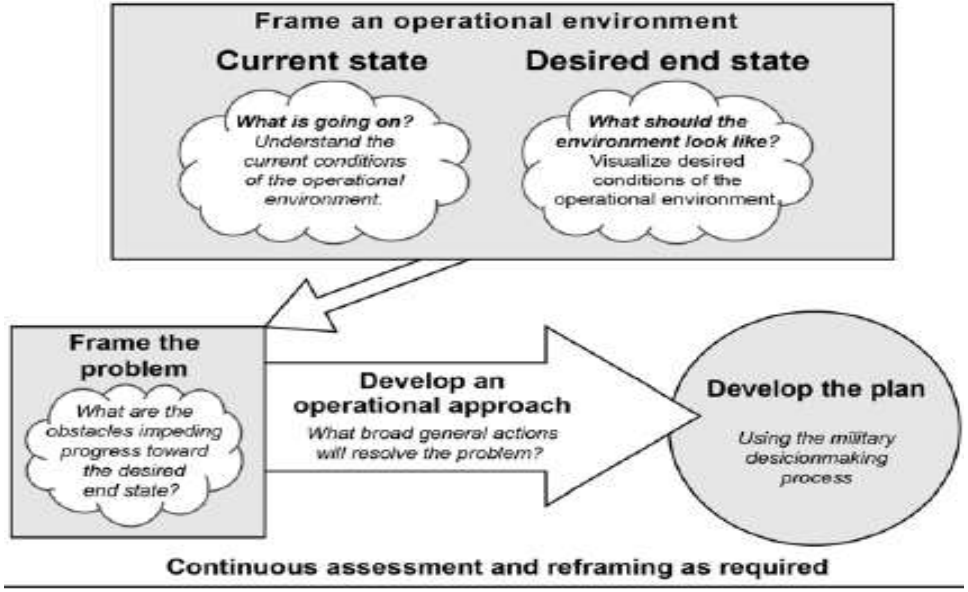


Figure 2-2. Army design methodology

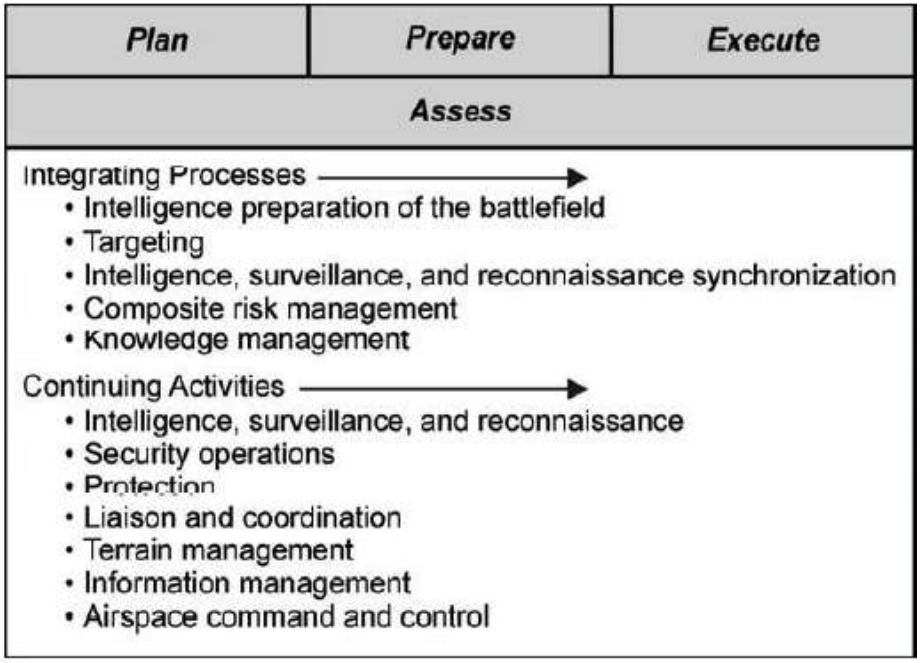


Figure 6-1. Operations process expanded

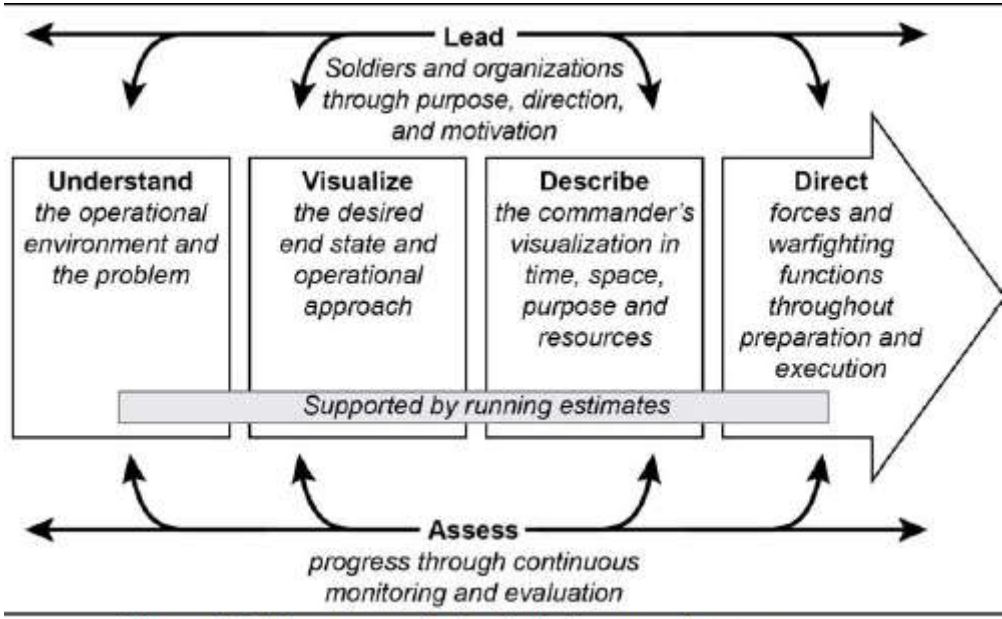
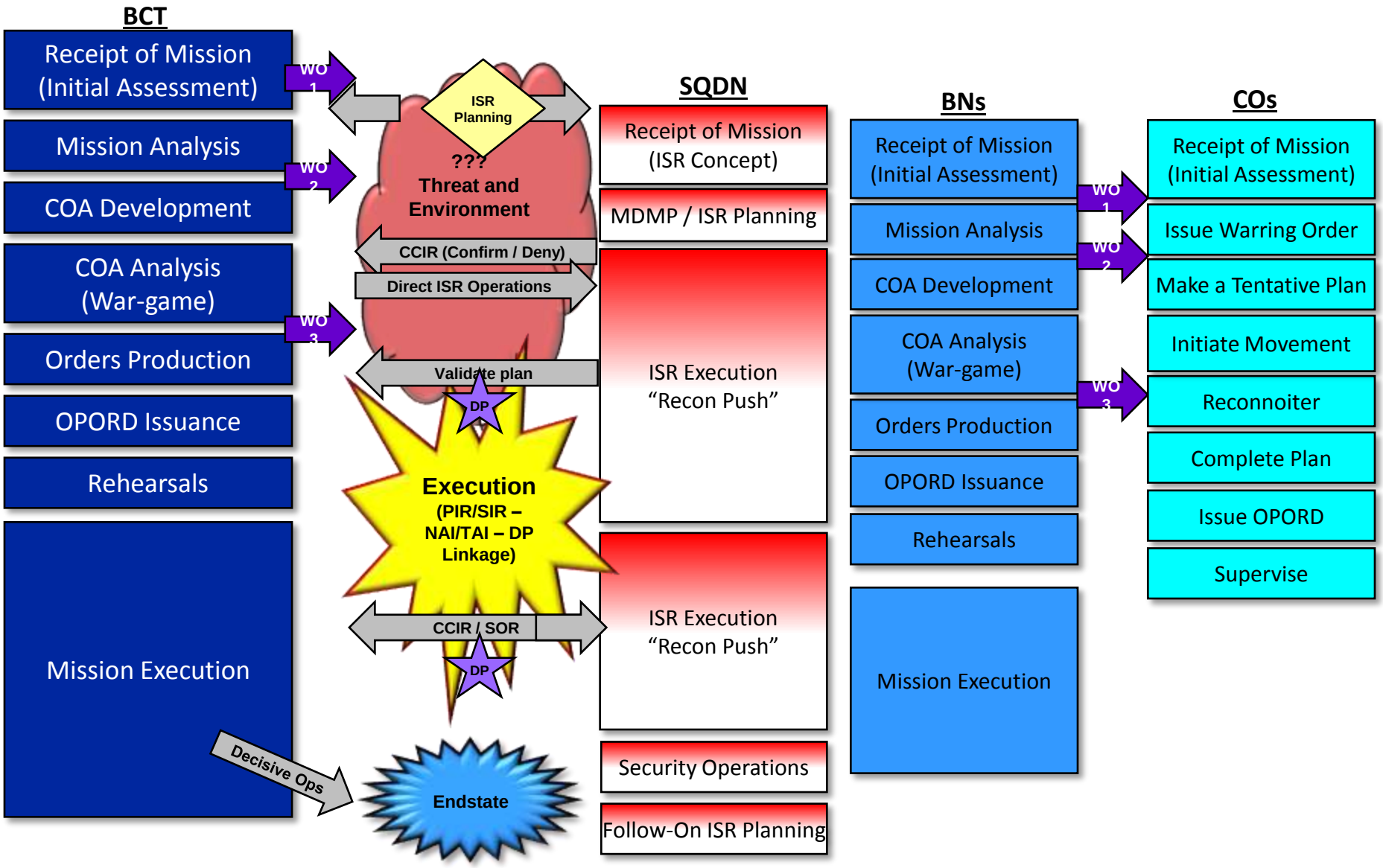


Figure 1-2. The commander's role in the operations process

COLLABORATIVE MDMP / TLP OVERVIEW



MILITARY DECISION-MAKING PROCESS

- Develop / Update Staff Estimates
- Intelligence Preparation Of the Battlefield
- Receipt of Mission (Initial Assessment)
- Mission Analysis
- COA Development
- COA Analysis (War-game)
- COA Comparison
- COA Approval
- Orders Production
- Order Issuance
- Backbriefs
- Rehearsals

✓ Reconnaissance and Surveillance / ISR Plan
✓ Decisive Operation / Shaping Operations
✓ Targeting / "Man-Hunting"
✓ Non-Lethal Effects Planning

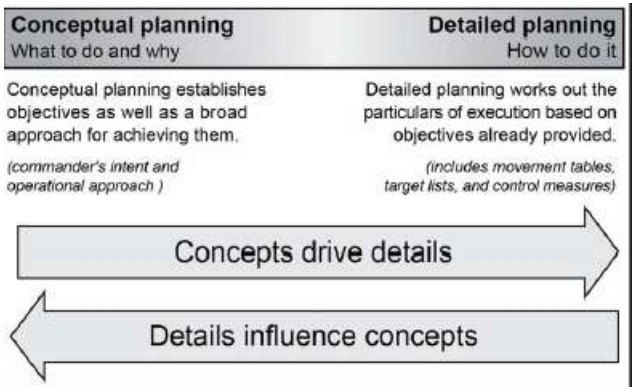
- A planning model that establishes procedures for analyzing a mission, developing, analyzing, and comparing courses of action against criteria of success and each other, selecting the optimum course of action, and producing a plan or order
- Applies across the spectrum of conflict and range of military operations
- Helps organize the thought process of commanders and staff

Planning is the art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing that future about (ADP 5-0). Planning helps commanders create and communicate a common vision between commanders, their staffs, subordinate commanders, and unified action partners. Planning results in a plan and orders that synchronize the action of forces in time, space, and purpose to achieve objectives and accomplish missions. Planning is both a continuous and a cyclical activity of the operations process. A product of planning is a plan or order—a directive for future action.

Any plan or order is a framework from which to adapt, not a script to be followed to the letter. The measure of a good plan is not whether execution transpires as planned, but whether the plan facilitates effective action in the face of unforeseen events. Good plans and orders foster initiative.

Planning and Plans assist leaders by:
•Understand and develop solutions to problems.
•Anticipate events and adapt to changing circumstances.
•Task-organize the force and prioritize efforts.

Good OPLANs and OPORDs—
• Possess simplicity.
• Possess authoritative expression.
•Possess positive expression.
• Avoid qualified directives.
•Possess brevity.
•Possess clarity.
•Contain assumptions.
• Incorporate flexibility.
•Exercise



The Military Decision Making Process

I. Receipt of Mission

INPUT
- Mission Received or Deduced by CDR or Staff

1. Alert the Staff
2. Gather the Tools
3. Update Staff Estimates
4. Perform an Initial Assessment
5. Issue the Initial Guidance
6. Issue the Initial Warning Order

OUTPUT
- Initial Operational Timeline (4)
- CDRs Initial Planning Guidance (5)
- WARNO #1 (6)

II. Mission Analysis

INPUT
- Higher HQ Order
- Higher HQ IPB
- Staff Estimates

1. Analyze Higher Order
2. Perform Initial IPB
3. Determine Specified, Implied & Essential Tasks
4. Review Available Assets
5. Determine Constraints
6. Identify Critical Facts & Assumptions
7. Perform Risk Assessment
8. Determine Initial CCIR & EEFI
9. Determine Initial ISR Plan
10. Update Operational Timeline
11. Write Restated Mission
12. Mission Analysis Briefing
13. Approve the Restated Mission
14. Develop the Initial Commanders Intent
15. Issue the Commanders Planning Guidance
16. Issue Warning Order 2
17. Review Facts and Assumptions

OUTPUT
- Updated Staff Estimates and Products (Continuous)
- Initial IPB (Enemy SITEMPs, MCOO, HVTs) (2), Initial CCIR (8), Initial ISR Plan (9), Updated Operational Timeline (10), Mission Analysis Briefing (12)
- Restated Mission (13), Initial CDRs Intent (14), CDRs Planning Guidance (15)
- WARNO #2 (16), Preliminary Movement

III. COA Development

INPUT
- Restated Mission, Initial CDRs Intent, Planning Guidance & CCIR, Updated Staff Estimates, Initial IPB Products

1. Analyze Relative Combat Power
2. Generate Options
3. Array Initial Forces
4. Develop the Concept of the Operation
5. Assign HQ
6. Prepare COA Statement & Sketches

OUTPUT
- Updated Staff Estimates and Products
- COA Statements and Sketches (5)
- COA Briefing
- Refined CDRs Intent and Planning Guidance

IV. COA Analysis (War Game)

INPUT
- Refined CDRs Intent & Planning Guidance & CCIR
- Enemy COAs, FR COA Statements & Sketches

1. Gather the Tools
2. List All Friendly Forces
3. List Assumptions
4. List Known Critical Events and Decision Points
5. Determine Evaluation Criteria
6. Select War Game Method
   (Box, Belt, Avenue in Depth)
7. Select a Method to Record and Display Results
8. War Game the Battle and Assess the Results

OUTPUT
- War Game Results & Products (8)
  - Concept of Operations
  - Sync Matrix
  - Operations Overlay
  - Decision Support Templates (DST)
  - Task Organization
  - Mission to Subordinate Units
  - Recommended CCIR
- War Game Briefing (Optional)

V. COA Comparison

INPUT
- War Game Results
- Criteria for Comparison

1. Evaluate COA Advantages and Disadvantages
2. Compare COAs
3. Develop a Recommended COA

OUTPUT
- Decision Matrix (2)
- COA Decision Briefing (3)

VI. COA Approval

INPUT
- Decision Matrix

1. Staff COA Recommendation (Decision Briefing)
2. Commander's Decision
3. Commander's Final Planning Guidance

OUTPUT
- Refined CDRs Intent & CCIR; High Pay-Off Target List
- Commanders Final Planning Guidance (3)
- Approved COA & WANRO #3

VII. Orders Production

INPUT
- Approved COA
- Refined CDRs Intent and Guidance
- Refined CCIR

1. Prepare the OPORD
2. Implement Risk Controls
3. Commander Reviews and Approves the Order

OUTPUT
- OPLAN / OPORD

PREPARATION

EXECUTION

Targeting Decide (Detect, Deliver & Assess→)

Mission Analysis	COA DEV	COA Comparison War Game
- MCOO	- Potential:	- HPTL & TSS
- COA & SITEMP	HPTL	- DST
- HVTs & TVA	TSS	- AGM
- Event Temp & Event Matrix		- Refined Event Temp / Event Matrix (EM)
- Assets Available to Detect, Deliver & Asses		- Updated PIR & IR
		- TSM (Supported by FSM & EM)

Intelligence Preparation of the Battlefield

Define the Battlefield Environment

1. ID Significant Characteristics of the Environment
2. ID the Limits of the AO / Operational Environment
3. Establish Limits of the AI
4. ID the amount of detail required & reasonable within the time allotted
5. Evaluate existing data bases and ID intelligence gaps
6. Collect the required intelligence materials

Describe Battlefield Effects

1. Analyze the Terrain (O A K O C)
   Develop MCOO
2. Analyze the Weather (V W P C T)
3. Analyze Factors of the COE & Civil Considerations (A S C O P E)
4. Describe effects on threat and friendly capability and broad conceptual COA

13 HVT Categories

C3	
FS	NBC
MAN	BULK FUEL
ADA	AMMO
ENGR	MAINT
RISTA	LIFT
REC	LOC

Evaluate the Threat

1. Update or create threat models
   - Convert threat doctrine or patterns of operations to graphics
   - Describe the threat's tactics and options
   - Identify HVTs & Conduct TVA
2. Identify threat Capabilities
   (RCPA / Reverse WFF Analysis)
   (Composition, Oder of Battle & Strengths)
   (Doctemp & Disposition)

Determine Threat COA

1. ID Likely Threat OBJs and Desired End State
2. Identify the full set to threat COAs Available
   (Time: In concept form "Generate Options")
3. Evaluate & Prioritize Each COA
4. Develop Each COA in Detail (2+) (A G A D A P) (SITEMP & COA Statement)
   (Including Timed Phase Lines)
5. Identify Initial Collection Requirements
   (Event Temp & Event Matrix)
   (Remaining Intel Gaps)
   (Initial PIR & IR)

ISR Planning and Integration

Step 1: Develop Requirements
-Use results of IPB
-Develop PIR during MDMP
-Analyze Requirements
-Develop ISR Tasks

Step 2: Develop ISR Plan
-Develop ISR tasking matrix
-Evaluate Resources

Step 3: Develop ISR Order
-Integrate other staff functions
-ID support for collection assets
-Issue the ISR Order

Step 4: Disseminate Info Gathered
-Manage Information Reported

Step 5: Evaluate Reporting
-Monitor and Maintain Synchronization
-Correlate reports to requirements
-Provide feedback to collectors

Step 6: Update ISR Operations
-Eliminate Satisfied Requirements
-Redirect assets to unsatisfied requirements
-Cue assets to collection opportunities
-Maintain Synchronization

Running Estimate : (ADP 5-0)

The continuous assessment of the current situation used to determine if the current operation is proceeding according to the commander's intent and if planned future operations are supportable. Accurate and timely running estimates are key knowledge management tools that allow staffs to assist commanders in driving the operations process. Running estimate details the ability of the staff section (WFF) to support current and future operations. Failure to maintain accurate running estimates may lead to errors or omissions that result in flawed plans or bad decisions during execution

--Facts: (updated facts and assumptions as the basis for evaluation during assessment process).
--Assumptions:
1. SITUATION AND CONSIDERATIONS.
a. Area of Interest. Identify and describe those factors of the area of interest that affect functional area considerations.
b. Characteristics of the Area of Operations.
(1) Terrain. State how terrain affects staff functional area's capabilities.
(2) Weather. State how weather affects staff functional area's capabilities.
(3) Enemy Forces. Describe enemy disposition, composition, strength, capabilites and systems within a functional area as well as enemy activities capabilities and possible courses of action (COAs) with respect to their effects on a functional area.
(4) Friendly Forces. List current functional area resources in terms of equipment, personnel, and systems. Identify additional resources available for the functional area located at higher, adjacent, or other units. List those capabilities from other military and civilian partners that may be available to provide support within the functional area. Compare requirements to current capabilities and suggest solutions for satisfying discrepancies.
(5) Civilian Considerations. Describe civil considerations that may affect the functional area to include possible support needed by civil authorities from the functional area as well as possible interference from civil aspects.
c. Assumptions. List all assumptions that affect the functional area.
2. MISSION. Show the restated mission resulting from mission analysis and/ or the current mission statement.
-Staff Assessment of Hazards/Risks and mitigation techniques to the mission
3. COURSES OF ACTION.
a. List friendly COAs that were war-gamed.
b. List enemy actions or COAs that were templated that impact the functional area.
c. List the evaluation criteria identified during COA analysis. All staffs use the same criteria.
4. ANALYSIS. Analyze each COA using the evaluation criteria from COA analysis. Review enemy actions that impact the functional area as they relate to COAs. Identify issues, risks, and deficiencies these enemy actions may create with respect to the functional area.
5. COMPARISON. Compare COAs. Rank order COAs for each key consideration. Use a decision matrix to aid the comparison process.
6. RECOMMENDATIONS AND CONCLUSIONS.
a. Recommend the most supportable COAs from the perspective of the functional area.
b. Prioritize and list issues, deficiencies, and risks and make recommendations on how to mitigate them.
c. Include recommendations for anticipated decisions.
7. Evaluate emerging variances. If necessary, staffs update the conclusions and recommendations of their running estimates for the commander, who directs the necessary action. Two forms of variances exist: opportunities and threats

GUIDE TO THE USE OF THE ESTMATE OF THE SITUTATION

1. MISSION ANALYSIS:
- **A. MISSION AND INTENT OF COMMANDERS ONE AND TWO LEVELS UP. (Intent and Concept)**
- **B. SPECIFIED AND IMPLIED TASKS.**
- **C. MISSION ESSENTIAL TASK(S).**
- **D. CONSTRAINTS/LIMITATIONS (INCLUDE TIME, SPACE, ASSETS, ROE, AND RISK).**
- **E. RESTATED MISSION (WHO, WHAT, WHEN, WHERE, WHY). (Task and Purpose)**
- **F. INITIAL TIME ANALYSIS.**

2. SITUATION AND COURSES OF ACTION.
- **A. CONSIDERATIONS AFFECTING POSSIBLE COURSES OF ACTION (LIST ASSUMPTIONS AND CONCLUSIONS DRAWN FROM RELATING THE FOLLOWING).**
  - **(1) CHARACTISTICS OF THE AREA OF OPERATIONS AND INTEREST (OAKOC)**
    - **a. WEATHER b. TERRAIN c. OTHER PERTINENT FACTORS.**
  - **(2) ENEMY SITUATION (WITH SITUATION / EVENT TEMPLATES)**
    - **a. DISPOSITION b. COMPOSITION c. STRENGTH d. ACTIVITIES e. WEAKNESSES**
  - **(3) OWN SITUATION (AS WITH THE ENEMY)**
  - **(4) RELATIVE COMBAT POWER**
- **B. ENEMY CAPABILITES (PCOAs) AND VULNERABILITIES TO THE FRIENDLY FORCE (WITH REFINED EVENT TEMPLATE AND INITIAL HVT AND TAI FOR DST)**
- **C. OWN COURSES OF ACTION INCLUDES WHAT, WHEN, WHERE, HOW, WHY, CONCEPT SKETCH. (COA Development)**

3. ANALYSIS OF COURSES OF ACTION (USE WARGAMING METHOD TO IDENTIFY ADVANTAGES AND DISADVANTAGES, REFINE COURSE OF ACTION, AND REFINE THE SIGNIFICANT FACTORS). (Techniques: Box, Belt, Ave of Approach)

4. COMPARISON OF THE COURSES OF ACTION (USING SIGNIFICAT FACTORS, ADVANTAGES AND DISADVANTAGES, AND GENERAL CONSIDERATIONS).

5. DECISION, RESTATING REFINED COURSE OF ACTION (AS A CONCEPT OF THE OPERATION WITH INTENTIONS, MANEUVER, FIRES, AND OTHER CS).

RUNNING ESTIMATES IN PLANNING

During planning, running estimates are key sources of information during mission analysis.
Following mission analysis, commanders and staff sections update their running estimates throughout the rest of the military decision making process.

RUNNING ESTIMATES IN PREPARATION

The commander and staff transition from planning to execution. As they transition, they use running estimates to identify the current readiness of the unit in relationship to its mission.

RUNNING ESTIMATES IN EXECUTION

During execution, the commander and staff incorporate information included in running estimates into the common operational picture.

RUNNING ESTIMATES IN ASSESSMENT

Each staff section continuously analyzes new information during operations to create knowledge and understand if operations are progressing according to plan. Staffs use their running estimates to develop measures of effectiveness and measures of performance to support their analyses. The assessment of current operations also supports validation or rejection of additional information that will help update the estimates and support further planning. At a minimum, a staff section's running estimate assesses the following:

- Friendly force capabilities with respect to ongoing and planned operations.
- Enemy capabilities as they affect the staff section's area of expertise for current operations and plans for future operations.
- Civil considerations as they affect the staff section's area of expertise for current operations and plans for future operations.

Friendly Assets Available

Unit	Asset	OH	Avail	FMC Status	Log Status	Use Time	Range	Supply Req	Pers Req	Pers Avail	Remarks

Friendly Forces and Capabilities

	Equipment	O/H	Capabilities/Limitations
1			
2			
3			
4			
5			
6			
7			

Notes:

Logistical/Maintenance Requirements
SM Training / # Trained
Operational Duration

Facts

1.
2.
3.
4.
5.

Assumptions

1.
2.
3.
4.
5.

RFIs

1.
2.
3.
4.
5.

Conclusions and Recommendations

1.
2.
3.
4.
5.

Enemy Assets Available

Unit	Asset	OH	Avail	Status	Use Time	Range	Supply Req	Pers Req	Pers Avail

Enemy Forces and Capabilities

	Equipment	O/H	Capabilities/Limitations
1			
2			
3			
4			
5			
6			
7			

Notes:

Logistical/Maintenance Requirements
SM Training / # Trained
Operational Duration

Facts

1.
2.
3.
4.
5.

Assumptions

1.
2.
3.
4.
5.

RFIs

1.
2.
3.
4.
5.

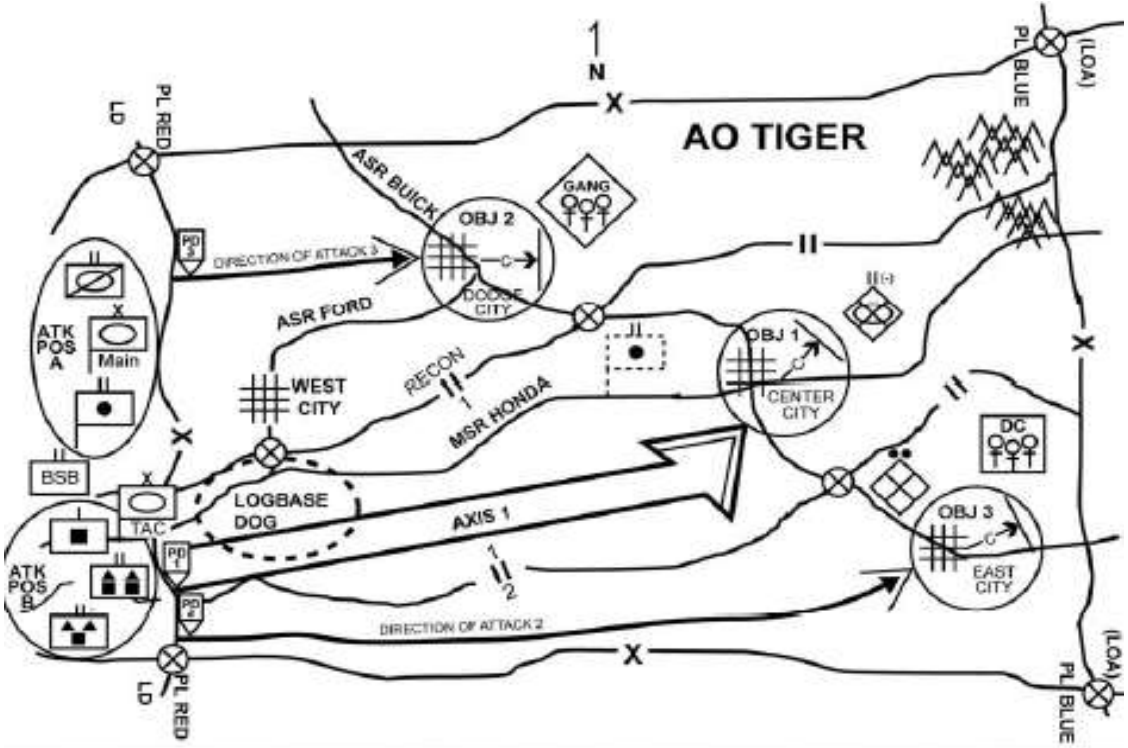
Conclusions and Recommendations

1.
2.
3.
4.
5.

COA DEVELOPMENT

(COAs must be Suitable, Feasible, Acceptable, Distinguishable, and Complete)

1. **Determine the Decisive Point (and time)**
2. **Determine the results to be achieved at the decisive point**
3. **Determine Purposes (main and supporting efforts)**
4. **Determine Essential Tasks. (task and purpose)**
5. **Identify types of Forces required to accomplish the mission. (Task Org)**
6. **Assign C2 HQ**
7. **Complete generic task organization**
8. **Assign Control Measures. (C2 HQ, Graphics)**
9. **Prepare COA Statement and Sketch**
   - **Task Org**
   - **Mission Statement**
   - **Concept Paragraph (Expands on nit purpose; designate decisive point/main effort; general description of mission accomplishment)**
   - **Sketch**
   - **Legend**



MISSION: On order, 3d HBCT clears remnants of the 72d Brigade in AO TIGER to establish security and enable the host-nation in reestablishing civil control and governance in the region.

INTENT: The purpose of this operation is to provide a safe and secure environment in AO TIGER that enables the host-nation and other civilian organization to reestablish civil control, restore essential services, and reestablish local governance within the area. At end state, the BCT has cleared remnant enemy forces in AO TIGER, secured population centers, and is prepared to transition responsibility for security to host-nation authority.

DECISIVE OPERATION: Combined Arms BN #1 (two armor/two mech) (ME) begins movement from ATK POS B, crosses LD at PD 1, and attacks along AXIS 1 to clear remnants of the 72d Brigade and secure the population in OBJ 1.

SHAPING OPERATIONS: Combined Arms BN #2 (-) (two armor/one mech) in the SOUTH follows Combined Arms BN #1 from ATK POS B, crosses LD at PD 2, and attacks along DIRECTION OF ATTACK 2 to clear OBJ 3 and provide security to dislocated civilian site vicinity EAST CITY. RECON squadron in the NORTH begins movement from ATK POS A, crosses LD at PD 3, and attacks along DIRECTION OF ATTACK 3 to clear hostile gang vic OBJ 2 and provide security to enable NGO delivery of humanitarian assistance to WEST CITY and DODGE CITY. 3rd HBCT Main CP moves and co-locates with RECON squadron.

The BCT reserve, Mech Company, locates with BSB vic AA DOG with priority of commitment: 1) OBJ 1 in support of Combined Arms BN #1; 2) MSR HONDA security; and 3) Security of supply/relief convoys.

3d HBCT TAC CP moves and co-locates with Combined Arms BN #1 in OBJ 1. HBCT main CP locates in ATK POS A. C/O moves and co-locates with RECON squadron in OBJ 2.

BCT FIRES will disrupt enemy mortars vic OBJ 1 and position to provide responsive precision fires to destroy remnant enemy forces in AO TIGER.

BCT ISR operations focus on: 1) Identifying the location and disposition of enemy forces vic. OBJ 1; 2) Observation of MSR HONDA between PL RED and PL BLUE; and 3) Observation of dislocated civilian traffic from CENTER CITY to EAST CITY.

SUSTAINING OPERATION: The BSB will establish LOGBASE DOG vic WEST CITY with MSR HONDA, ASR FORD, and ASR BUICK as the primary routes used to sustain operations. The BSB coordinates with humanitarian relief agencies to help rapidly restore essential services in AO TIGER.

TACTICAL RISK is assumed in the northeastern portion of AO TIGER by utilizing primarily ISR assets to maintain situational awareness of hostile elements that may use mountains to reconstitute forces.

By WFF Template/Overlay Requirement

Intel: Weather Chart, Civil Considerations (population overlay—ethic, religion, language) Infrastructure overlay, , DOCTEMP, Composition, Disposition, ENCOA, SITTEMP for each EN COA, Event Template, ISR Overlay, ,

Fires: Fire Support Overlay (observers, FA locations, proposed PAA), Fire Support Coordination Measures Overlay, Fire Support Radar Overlay, Fire support Target Overlay, Fire Support Execution Matrix, Target Selection Standards, Target Synch Matrix, Attack Guidance Matrix, Target List Worksheet. EW overlay

MVMT/MNVR: Operations Overlay, Division and BCT Maneuver Graphics, Execution Matrix, Decision Support Template and Matrix, Gap Crossing Overlay, Traffic Control Overlay, AASLT Overlay,

ENG: Terrain (MCOO), Line of Communication Overlay, Ave of Approach Overlay, ENG Overlay—planned obstacle, executed obstacle, planned survivability, executed survivability.

MP: MP overlay—routes, TCP, EPW exchange point, holding areas, MP locations, Internment and Resettlement, Operations Area Security.

ADAM: Army Airspace Command and Control Overlay, Air Ave of Approach Overlay, ADA Overlay—ADA assets and ranges. Enemy Air order of battle, EN Air AVE of approach. Air and Missile Defense Protection overlay. Critical Asset list/Defended Asset List, Pers Recovery Overlay,

CBRNE: CBRNE Overlay—decon sites, contaminated areas, Obscuration,

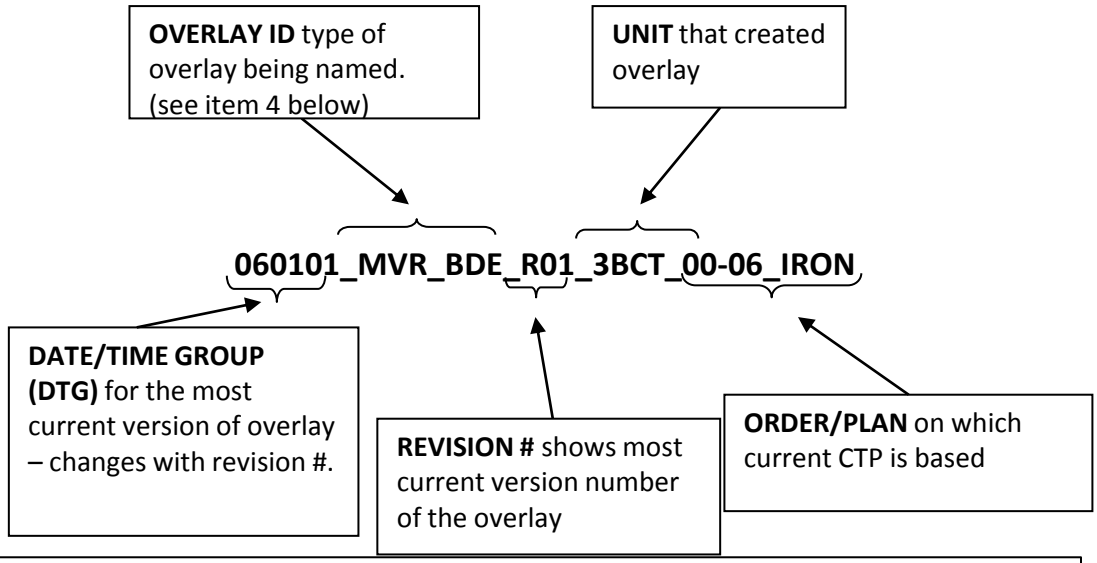
JAG: No strike list, Restricted Target List

Sustainment: Sustainment Overlay—CSS routes, CSS points (Supply, EPW, aid stations, AXP, HLZ, UMCP, FAS, MAS, FTCP, BAS), Traffic Circulation Overlay, Road Movement Table, CSS Support Areas

Mission Command: Signal Overlay—retran location,

Naming Conventions

Overlays created on any Army Battle Command System (ABCS) will use the following naming convention:



Users will use the 3BCT, 4ID File Naming Convention when posting files to shared directories or the Iron Portal. Users should store local files in this manner for consistency.

e.g., 111215_S6_3BCT_Mission Command SOP.doc
YYMMDD_Section_Unit_Brief product description
Product examples are SOP, CONOP, SIGACT, STORYBOARD

Chat Room Naming Convention

(a) The Brigade will establish the following chat rooms:

(i) 3/4ID TOC _3BCT4ID_TOC
(ii) 3/4ID Fires _3BCT4ID_FIRES
(iii) 3/4ID Medical _3BCT4ID_SURGEONCELL
(iv) 3/4ID S2_3BCT4ID_S2
(v) 3/4ID COIST _3BCT4ID_COIST
(vi) 3/4ID Shadow _3BCT4ID_SHADOW
(vii) 3/4ID ISR _ISR
(viii) 3/4ID S3 _3BCT4ID_OPS
(ix) 3/4ID Plans _3BCT4ID_PLANS
(x) 3/4ID BAE _3BCT4ID_BAE
(xi) 3/4ID TUAS _3BCT4ID_TUAS
(xii) 3/4ID LOG _3BCT4ID_LOG
(xiii) 3/4ID Non-Lethal_3BCT4ID_NL
(xiv) 3/4ID Medevac _3BCT4ID_MEDEVAC
(xv) Predator_#MQ1
(xvi) Medevac (USFI) #MEDEVAC
(xvii) UAV_GODFATHER_UAV

All overlays created within 3BCT will use the following color conventions.

Corps/Higher units	Black
Brigade/Brigade Graphics	Blue
Battalion/Squadron	Light Blue/Cyan
Air Control Measures	Light Blue/Cyan
Chemical Control Measures	Yellow
Signal Control Measures	Orange
Default colors within the ATCCS systems.	
Enemy Graphics	Red
Weapons Range Fan Graphics	Green
Sensor Range Fan Graphics	Blue
Obstacle Graphics	Green

Naming Conventions

•Objectives - Famous Personalities. Includes objectives, engagement areas, and attack positions.

Brigade	1-8 Inf	1-68 AR	4-10 CAV	3-29 FA	64th BSB	3BSTB
Generals	Presidents	Actors	Baseball Players	Quarterbacks	Foreign Leaders	Criminals

•Phase Lines - Industries. Includes both phase lines and lateral phase lines.

Brigade	1-8 Inf	1-68 AR	4-10 CAV	3-29 FA	64th BSB	3BSTB
US Cars	Trucks	Aircraft/ Airlines	Foreign Cars	Electronics	Restaurants	Hotels

Routes - Geography/Sports Teams. Includes axes of advance, routes, main supply routes, alternate supply routes, air corridors, etc.

Brigade	1-8 Inf	1-68 AR	4-10 CAV	3-29 FA	64th BSB	3BSTB
Countries	States	Cities	Football Teams	Baseball Teams	Basketball Teams	Hockey Teams

•Areas - Nature. Includes assembly areas, holding areas, FARPs, LZ/PZs, etc.

Brigade	1-8 Inf	1-68 AR	4-10 CAV	3-29 FA	64th BSB	3BSTB
Metals	Trees	Birds	Mammals	Reptiles	Fish	Rocks/Gems

•Points. Includes checkpoints, contact points, start/release points, passage points traffic control points, target reference points, etc

001-199	**Brigade**	500-699	**3-29 FA**
200-299	**1-8 Inf**	700-799	**64th BSB**
300-399	**1-68 AR**	800-899	**3BSTB**
400-499	**4-10 CAV**	900-999	**Others**

•NAI Numbering.

001-199	**Brigade**	500-699	**3-29 FA**
200-299	**1-8 Inf**	700-799	**64th BSB**
300-399	**1-68 AR**	800-899	**3BSTB**
400-499	**4-10 CAV**	900-999	**Others**

•Target Numbering

AX0001-0999	**Brigade**	AX7000-7999	**Q-36**
AX1000-1999	**1-8 Inf**	AX8000-8299	**Q-37**
AX2000-2999	**1-68 AR**	AX8300-8999	**Attached Units**
AX3000-3999	**4-10 CAV**	AX9000-9999	**Spare**
AX4000-4999	**3-29 FA**		
AX5000-5999	**64th BSB**	AX6000-6999	**3BSTB**

ORDERS PRODUCTION

An order is a communication—verbal, written, or signaled—which conveys instructions from a superior to a subordinate. Commanders issue orders verbally or in writing. The five-paragraph format (situation, mission, execution, sustainment, and command and signal) remains the standard for issuing orders. The technique used to issue orders (verbal or written) is at the discretion of the commander; each technique depends on time and the situation.

Army organizations use three types of orders:
•Operation order (OPORD).
•Fragmentary order (FRAGO).
•Warning order (WARNO).

Good OPLANs and OPORDs—
Possess simplicity.
Possess authoritative expression.
Possess positive expression.
Avoid qualified directives.
Possess brevity.
Possess clarity.
Contain assumptions.
Incorporate flexibility.
Exercise timeliness.

- **Written, Five Paragraph Order (Concept Base)**
- **Detailed Annexes (Technical Data)**
- **Operations Schedule / Synch Matrix**
  - **Synchronize activities in Time, Space, and Purpose**
- **Operational Graphics**
  - **GFCM, DFCM**
- **Support Graphics**
  - **Fires, Intel, Sustainment**
- **Decision Support Matrix**
- **Decision Support Template = NAI – PIR/SOR – DP Linkage**

ANNEXES: ***List annexes by letter and title***
Annex A – Task Organization
Annex B – Intelligence
Annex C – Operations
Annex D – Fires
Annex E – Protection
Annex F – Sustainment
Annex G – Engineer
Annex H – Signal
Annex I – Not Used
Annex J – Inform and Influence Activities
Annex K – Civil Affairs Operations
Annex L – Reconnaissance and Surveillance
Annex M – Assessment
Annex N – Space Operations
Annex O – Not Used
Annex P – Host-Nation Support
Annex Q – Spare
Annex R – Reports
Annex S – Special Technical Operations
Annex T – Spare
Annex U – Inspector General
Annex V – Interagency Coordination
Annex W – Spare
Annex X – Spare
Annex Y – Spare
Annex Z – Distribution

Formats and instructions for developing a WARNO.

[CLASSIFICATION]

(Change from verbal orders, if any) (Optional)

[Heading data is the same as for OPLAN/OPORD]

WARNING ORDER [number]

(U) References: ***Refer to higher headquarters' OPLAN or OPORD and identify map sheets for*** *operation (Optional).*

(U) Time Zone Used Throughout the OPLAN/OPORD*: (Optional).*

(U) Task Organization*: (Optional).*

1. (U) Situation. ***The situation paragraph describes the conditions and circumstances of the*** *operational environment that impact operations in the following subparagraphs:*

a. (U) Area of Interest.

b. (U) Area of Operations.

c. (U) Enemy Forces.

d. (U) Friendly Forces.

e. (U) Interagency, Intergovernmental, and Nongovernmental Organizations.

f. (U) Civil Considerations.

g. (U) Attachments and Detachments*. Provide initial task organization.*

h. (U) Assumptions. *List any significant assumptions for order development.*

2. (U) Mission. ***State the issuing headquarters' mission.***

3. (U) Execution.

a. (U) Initial Commander's Intent*. Provide brief commander's intent statement.*

b. (U) Concept of Operations*. This may be "to be determined" for an initial WARNO.*

c. (U) Tasks to Subordinate Units. *Include any known tasks at time of issuance of WARNO.*

d. (U) Coordinating Instructions.

4. (U) Sustainment. ***Include any known logistics, personnel, or Army health system preparation tasks.***

5. (U) Command and Signal*. Include any changes to the existing order or state "No change."*

ACKNOWLEDGE:

[Commander's last name]

[Commander's rank]

OFFICIAL:

[Authenticator's name]

[Authenticator's position]

ANNEXES: ***List annexes by letter and title.***

DISTRIBUTION:

[page number]

[CLASSIFICATION]

FIRST WARNING ORDER: The first warning order follows the five-paragraph OPORD format and includes the following items, at a minimum.

- Type of operation.
- General location of operation.
- Initial operational timeline.
- Reconnaissance to initiate.
- Movement to initiate.
- Planning and preparation instructions (to include planning timeline).
- Information requirements.
- Commander's critical information requirements.

SECOND WARNING ORDER: The Staff's second warning orders include essential information from their mission analyses and additional guidance from BCT/DIV. They must understand the information from their highers' second warning orders. They assess the situation as best they can, but can probably complete detailed mission analyses only after they receive the actual OPORDs. Their second warning orders contain the following information from their own mission analyses.

- Terrain analysis.
- Enemy forces (para 1a of higher's OPORD, including enemy SITEMP).
- Higher headquarters' restated mission.
- Higher commander's intent.
- Areas of operation and interest.
- CCIR and EEFI.
- Risk guidance.
- Surveillance and reconnaissance to initiate.
- Security measures.
- Deception guidance.
- Mobility and countermobility.
- Specific priorities.
- Updated operational timeline.
- Guidance on rehearsals.

THIRD WARNING ORDER: The third warning order is normally issued after the COA is finalized. For battalion level and up, that is, units with staffs, this occurs after COA approval. This warning order contains the—

- Mission.
- Commander's intent.
- Updated CCIR and EEFI.
- Concept of operation.
- Areas of operation and interest.
- Principle tasks assigned to subordinates.
- Preparation and rehearsal instructions not covered in SOPs.
- Finalized operational timeline.

OPORD Template

OPERATION PLAN/ORDER [number] [(code name)] [(classification of title)]
Number plans and orders consecutively by calendar year. Include code name, if any.
(U) References: ***List documents essential to understanding the OPLAN/OPORD. List references***
concerning a specific function in the appropriate attachments.
(a) *List maps and charts first. Map entries include series number, country, sheet names, or numbers, edition, and scale.*
(b) *List other references in subparagraphs labeled as shown.*
(U) Time Zone Used Throughout the OPLAN/OPORD: ***State the time zone used in the area of*** *operations during execution. When the OPLAN/OPORD applies to units in different time zones, use Greenwich Mean (ZULU) Time.*
(U) Task Organization: ***Describe the organization of forces available to the issuing headquarters and*** *their command and support relationships. Refer to Annex A (Task Organization) if long or complicated.*
1. (U) Situation. ***The situation paragraph describes the conditions of the operational environment that*** *impact operations in the following subparagraphs:*
a. (U) Area of Interest. *Describe the area of interest. Refer to Annex B (Intelligence) as required.*
b. (U) Area of Operations. *Describe the area of operations (AO). Refer to the appropriate map by its subparagraph under references, for example, "Map, reference (b)." Refer to the Appendix 2 (Operation Overlay) to Annex C (Operations).*
(1) (U) Terrain. *Describe the aspects of terrain that impact operations. Refer to Annex B (Intelligence) as required.*
(2) (U) Weather. *Describe the aspects of weather that impact operations. Refer to Annex B (Intelligence) as required.*
c. (U) Enemy Forces. *Identify enemy forces and appraise their general capabilities. Describe the enemy's disposition, location, strength, and probable courses of action. Identify known or potential terrorist threats and adversaries within the AO. Refer to Annex B (Intelligence) as required.*
d. (U) Friendly Forces. *Briefly identify the missions of friendly forces and the objectives, goals, and missions of civilian organizations that impact the issuing headquarters in following subparagraphs:*
(1) (U) Higher Headquarters' Mission and Intent. *Identify and state the mission and commander's intent for headquarters two levels up and one level up from the issuing headquarters.*
(a) (U) [Higher Headquarters Two Levels Up]. *Identify the higher headquarters two levels up the paragraph heading (for example, Joint Task Force-18).*
1 (U) Mission.
2 (U) Commander's Intent.
(b) (U) [Higher Headquarters]. *Identify the higher headquarters one level up in the paragraph heading (for example, 1st (U.S.) Armored Division).*
1 (U) Mission.
2 (U) Commander's Intent.
(2) (U) Missions of Adjacent Units. *Identify and state the missions of adjacent units and other units whose actions have a significant impact on the issuing headquarters.*
e. (U) Interagency, Intergovernmental, and Nongovernmental Organizations. *Identify and state the objective or goals and primary tasks of those non-Department of Defense organizations that have a significant role within the AO. Refer to Annex V (Interagency Coordination) as required.*
f. (U) Civil Considerations. *Describe the critical aspects of the civil situation that impact operations. Refer to Appendix 1 (Intelligence Estimate) to Annex B (Intelligence) as required.*
g. (U) Attachments and Detachments. *List units attached to or detached from the issuing headquarters. State when each attachment or detachment is effective (for example, on order, on commitment of the reserve) if different from the effective time of the OPLAN/OPORD. Do not repeat information already listed in Annex A (Task Organization).*
h. (U) Assumptions. *List assumptions used in the development of the OPLAN/OPORD.*
2. (U) Mission. ***State the unit's mission—a short description of the who, what (task), when, where, and*** *why (purpose) that clearly indicates the action to be taken and the reason for doing so.*
3. (U) Execution. ***Describe how the commander intends to accomplish the mission in terms of the*** *commander's intent, an overarching concept of operations, schemes of employment for each warfighting function, assessment, specified tasks to subordinate units, and key coordinating instructions in the subparagraphs below.*
a. (U) Commander's Intent. *Commanders develop their intent statement personally. The commander's intent is a clear, concise statement of what the force must do and the conditions the force must establish with respect to the enemy, terrain, and civil considerations that represent the desired end state. It succinctly describes what constitutes the success of an operation and provides the purpose and conditions that define that desired end state. The commander's intent must be easy to remember and clearly understood two echelons down.*

OPORD Template cont.

b. (U) Concept of Operations. *The concept of operations is a statement that directs the manner in which subordinate units cooperate to accomplish the mission and establishes the sequence of actions the force will use to achieve the end state. It is normally expressed in terms of decisive, shaping, and sustaining operations. It states the principal tasks required, the responsible subordinate units, and how the principal tasks complement one another. Normally, the concept of operations projects the status of the force at the end of the operation. If the mission dictates a significant change in tasks during the operation, the commander may phase the operation. The concept of operations may be a single paragraph, divided into two or more subparagraphs, or if unusually lengthy, summarized here with details located in Annex C (Operations). If the concept of operations is phased, describe each phase in a subparagraph. Label these subparagraphs as "Phase" followed by the appropriate Roman numeral, for example, "Phase I." If the operation is phased, all paragraphs and subparagraphs of the base order and all annexes must mirror the phasing established in the concept of operations. The operation overlay and graphic depictions of lines of effort help portray the concept of operations and are located in Annex C (Operations).*

c. (U) Scheme of Movement and Maneuver. *Describe the employment of maneuver units in accordance with the concept of operations. Provide the primary tasks of maneuver units conducting the decisive operation and the purpose of each. Next, state the primary tasks of maneuver units conducting shaping operations, including security operations, and the purpose of each. For offensive operations, identify the form of maneuver. For defensive operations, identify the type of defense. For stability operations, describe the role of maneuver units by primary stability tasks. If the operation is phased, identify the main effort by phase. Identify and include priorities for the reserve. Refer to Annex C (Operations) as required.*

(1) (U) Scheme of Mobility/Countermobility. *State the scheme of mobility/countermobility including priorities by unit or area. Refer to Annex G (Engineer) as required.*

(2) (U) Scheme of Battlefield Obscuration. *State the scheme of battlefield obscuration, including priorities by unit or area. Refer to Appendix 9 (Battlefield Obscuration) to Annex C (Operations) as required.*

(3) (U) Scheme of Intelligence, Surveillance, and Reconnaissance. *Describe how the commander intends to use intelligence, surveillance, and reconnaissance (ISR) to support the concept of operations. Include the primary reconnaissance objectives. Refer to Annex L (Intelligence, Surveillance, and Reconnaissance) as required*

d. (U) Scheme of Intelligence. *Describe how the commander envisions intelligence supporting the concept of operations. Include the priority of effort to situation development, targeting, and assessment. State the priority of intelligence support to units and areas. Refer to Annex B (Intelligence) as required.*

e. (U) Scheme of Fires. *Describe how the commander intends to use fires (lethal and nonlethal) to support the concept of operations with emphasis on the scheme of maneuver. State the fire support tasks and the purpose of each task. State the priorities for, allocation of, and restrictions on fires. Refer to Annex D (Fires) as required. If Annex D is not used, use subparagraphs for fires categories (for example, field artillery and command and control warfare) based on the situation.*

f. (U) Scheme of Protection. *Describe how the commander envisions protection supporting the concept of operations. Include the priorities of protection by unit and area. Include survivability. Address the scheme of operational area security, including security for routes, bases, and critical infrastructure. Identify tactical combat forces and other reaction forces. Use subparagraphs for protection categories (for example, air and missile defense and explosive ordnance disposal) based on the situation. Refer to Annex E (Protection) as required.*

g. (U) Stability Operations*. Describe how the commander envisions the conduct of stability operations in coordination with other organizations through the primary stability tasks. (See FM 3-07.) If other organizations or the host nation are unable to provide for civil security, restoration of essential services, and civil control, then commanders with an assigned AO must do so with available resources, request additional resources, or request relief from these requirements from higher headquarters. Commanders assign specific responsibilities for stability tasks to subordinate units in paragraph 3.i (Tasks to Subordinate Units) and paragraph 3.j (Coordinating Instructions). Refer to Annex C (Operations) and Annex K (Civil Affairs Operations) as required.*

h. (U) Assessment. *Describe the priorities for assessment and identify the measures of effectiveness used to assess end state conditions and objectives. Refer to Annex M (Assessment) as required.*

i. (U) Tasks to Subordinate Units. *State the task assigned to each unit that reports directly to the headquarters issuing the order. Each task must include who (the subordinate unit assigned the task), what (the task itself), when, where, and why (purpose). Use a separate subparagraph for each unit. List units in task organization sequence. Place tasks that affect two or more units in paragraph 3.j (Coordinating Instructions).*

j. (U) Coordinating Instructions. *List only instructions and tasks applicable to two or more units not covered in unit SOPs.*

(1) (U) Time or condition when the OPORD becomes effective.

(2) (U) Commander's Critical Information Requirements. *List commander's critical information requirements (CCIRs) here.*

(3) (U) Essential Elements of Friendly Information. *List essential elements of friendly information (EEFIs) here.*

(4) (U) Fire Support Coordination Measures. *List critical fire support coordination or control measures.*

OPORD Template cont.

(5) (U) Airspace Coordinating Measures. *List critical airspace coordinating or control measures.*
(6) (U) Rules of Engagement. *List rules of engagement here. Refer to Appendix 12 (Rules of Engagement) to Annex C (Operations) as required.*
*(**Note: For operations within the United States and its territories, title this paragraph "Rules for the** Use of Force").*
(7) (U) Risk Reduction Control Measures. *State measures specific to this operation not included in unit SOPs. They may include mission-oriented protective posture, operational exposure guidance, troop-safety criteria, and fratricide prevention measures. Refer to Annex E (Protection) as required.*
(8) (U) Personnel Recovery Coordination Measures. *Refer to Appendix 2 (Personnel Recovery) to Annex E (Protection) as required.*
(9) (U) Environmental Considerations. *Refer to Appendix 6 (Environmental Considerations) to Annex G (Engineer) as required.*
(10) (U) Information Themes and Messages. *List themes and messages.*
(11) (U) Other Coordinating Instructions. *List additional coordinating instructions and tasks that apply to two or more units as subparagraphs at this level as required.*
4. (U) Sustainment. ***Describe the concept of sustainment, including priorities of sustainment by unit or*** *area. Include instructions for administrative movements, deployments, and transportation—or references to applicable appendixes—if appropriate. Use the following subparagraphs to provide the broad concept of support for logistics, personnel, and Army health system support. Provide detailed instructions for each sustainment sub function in the appendixes to Annex F (Sustainment) listed in table E-2.*
a. (U) Logistics. *Refer to Appendix 1 (Logistics) to Annex F (Sustainment) as required.*
b. (U) Personnel. *Refer to Appendix 2 (Personnel Services Support) to Annex F (Sustainment) as required.*
c. (U) Health System Support. *Refer to Appendix 3 (Army Health System Support) to Annex F (Sustainment) as required.*
5. (U) Command and Control.
a. (U) Command.
(1) (U) Location of Commander. *State where the commander intends to be during the operation, by phase if the operation is phased.*
(2) (U) Succession of Command. *State the succession of command if not covered in the unit's SOPs.*
(3) (U) Liaison Requirements. *State liaison requirements not covered in the unit's SOPs.*
b. (U) Control.
(1) (U) Command Posts. *Describe the employment of command posts (CPs), including the location of each CP and its time of opening and closing, as appropriate. State the primary controlling CP for specific tasks or phases of the operation (for example, "Division tactical command post will control the air assault").*
(2) (U) Reports. *List reports not covered in SOPs. Refer to Annex R (Reports) as required.*
c. (U) Signal. *Describe the concept of signal support, including location and movement of key signal nodes and critical electromagnetic spectrum considerations throughout the operation. Refer to Annex H (Signal) as required.*

Briefing formats. The following briefing formats will be used while completing tactics courses. Indicated with each briefing is the staff section that would normally present that briefing.

- Mission Analysis
  1. Preparation. Before completing mission analysis, the briefer should be familiar with –
     a. Area of operations
     b. Enemy situation and capabilities
     c. Time available
     d. Friendly troops available
  2. Briefing

Brief -	Briefer -
a. Proposed restated mission	XO/S3
b. Initial intelligence estimate (current terrain and weather analysis and threat eval)	S2
a. Mission of higher headquarters	S3
b. Intent of higher commander	S3
c. Limitations on the operation	S3
d. Specified and implied tasks	S3
e. Essential tasks	S3
f. Facts and assumptions	S3/S4
g. Proposed restated mission	S3
h. Commander's guidance	Cdr/XO

- Course of action
  1. Preparation. Prior to developing and subsequently briefing other staff members on proposed courses of action the S3 must know and understand –
     a. Mission of higher HQ
     b. Higher commander's intent
     c. Own commander's guidance and intent
     d. Terrain and weather
        - Area of interest
        - Area of operations
        - Avenues of approach
     e. Possible enemy course(s) of action
     f. Current situation and forces available
     g. Relative combat power required for operation
     h. Size of units to array
     i. Objectives (friendly and enemy)
  2. Briefing

Brief -	Briefer -
a. Updated intelligence estimate (current terrain and Weather analysis and enemy situation)	S2
a. Possible enemy courses of action (situation templates)	S2
b. Restated mission	S3
c. Higher and own commander's intent	S3
d. Course of action statement and sketch as a single entity	S3

        - Sketch includes array of forces and control measures for entire operation (may be on VGT, butcher paper, or map overlay)
        - Statement includes scheme of maneuver and addresses the five elements of the battlefield framework, the main effort, and any significant risk accepted

PREPARATION ACTIVITIES

Preparation consists of those activities performed by units and Soldiers to improve their ability to execute an operation (ADP 5-0). Preparation creates conditions that improve friendly forces' opportunities for success. It requires commander, staff, unit, and Soldier actions to ensure the force is trained, equipped, and ready to execute operations. Preparation activities help commanders, staffs, and Soldiers understand a situation and their roles in upcoming operations.

Table 3-1. Preparation activities

Continue to coordinate and conduct liaison	Conduct rehearsals
Initiate information collection	Conduct plans-to-operations transitions
Initiate security operations	Refine the plan
Initiate troop movement	Integrate new Soldiers and units
Initiate sustainment preparations	Complete task organization
Initiate network preparations	Train
Manage terrain	Perform pre-operations checks and inspections
Prepare terrain	Continue to build partnerships and teams
Conduct confirmation briefs	

GUIDES TO EFFECTIVE PREPARATION

The following guidelines aid in effective preparation:

- Secure and protect the force.
- Improve situational understanding.
- Understand, rehearse, and refine the plan.
- Integrate, organize, and configure the force.
- Ensure forces and resources are ready and positioned.

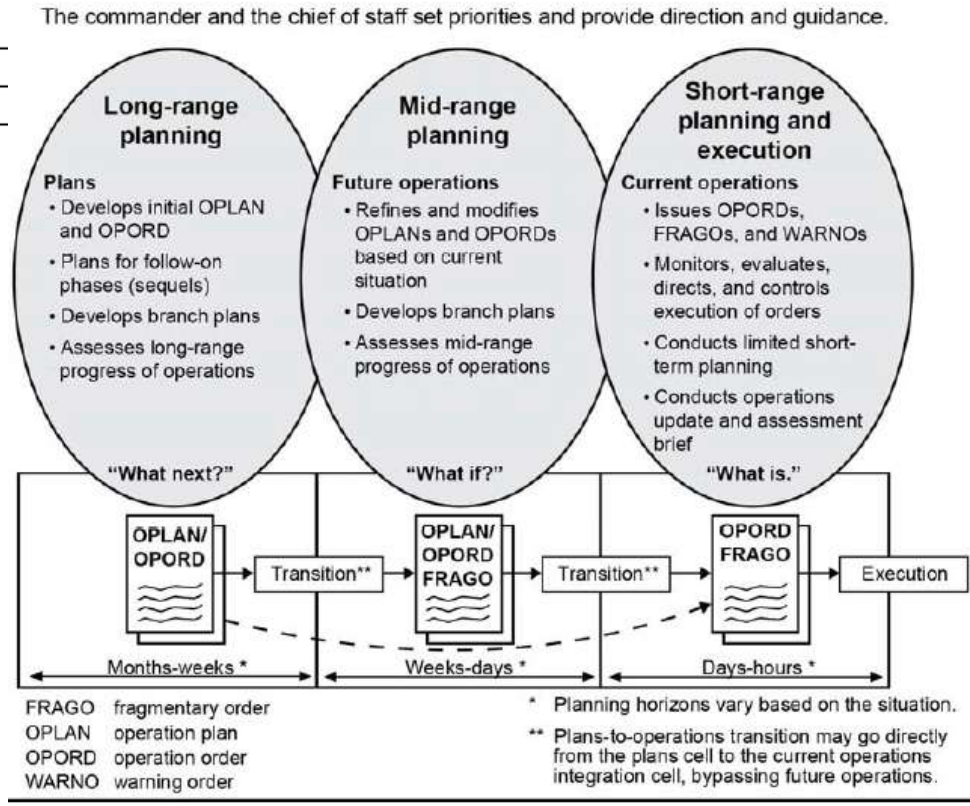
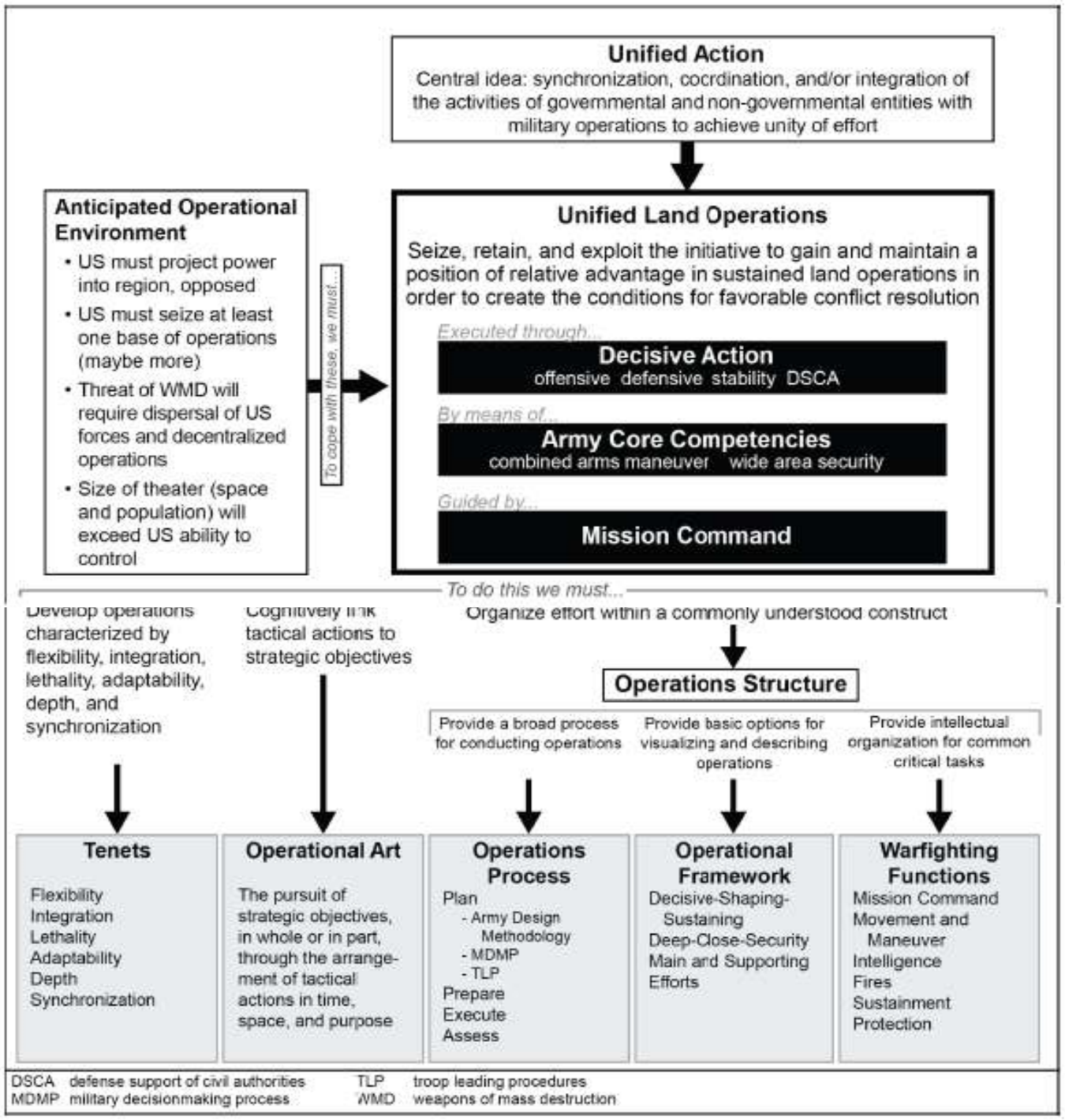


Figure 3-1. Transition among the integrating cells



CHARACTERISTICS OF THE OFFENSE

- **Surprise**: Striking the enemy at a time or place or in a manner for which it is not prepared
- **Concentration**: Ability to mass effects without massing large formations
- **Audacity**: Bold action in concert with calculation of risk
- **Tempo**: Rate of speed of military operations

TYPES OF THE TACTICAL OFFENSIVE

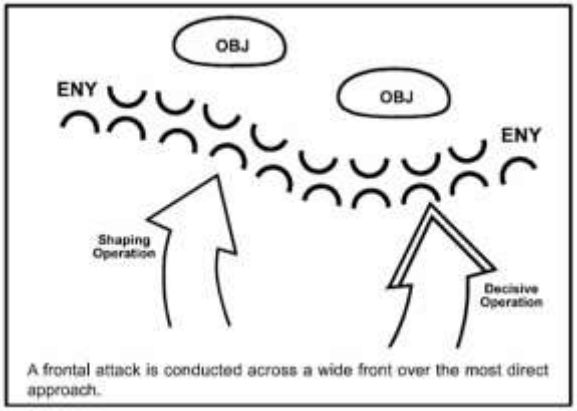
- **Movement to Contact**: An offensive operation conducted to develop the situation and to establish or regain contact with the enemy.
  - Search and Attack
  - Cordon and Search
- **Attack**: Destroy or defeat the enemy, seizes and secures terrain, or both.
  - Hasty Attack
  - Deliberate Attack
  - Special Purpose: Spoiling Attack, Counterattack, Raid, Ambush, Feint, and Demonstration
- **Pursuit**: An offensive operation against a retreating enemy force
- **Exploitation**: An extension of destruction of the defending force by maintaining offensive pressure

All offensive planning addresses the mission variables of METT-TC, with special emphasis on—

•Missions and objectives, to include task and purpose, for each subordinate element.
•Commander's intent.
•Enemy positions, obstacles, strengths, and capabilities.
•AOs for the use of each subordinate element with associated control measures.
•Time the operation is to begin.
•Scheme of maneuver.
•Targeting guidance and high-payoff targets.
•Special tasks required to accomplish the mission.
•Risk.
•Options for accomplishing the mission.

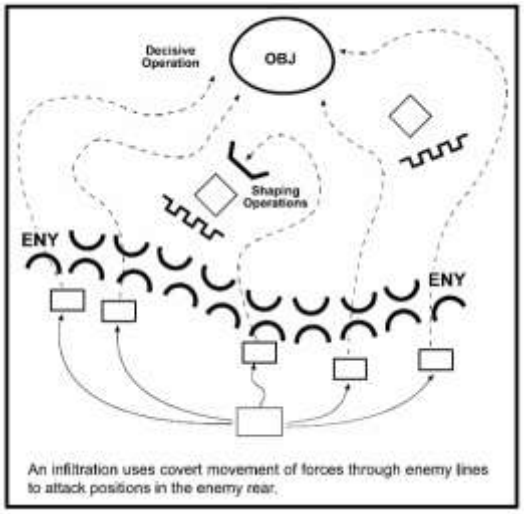
FORMS OF MANEUVER

Frontal Attack: Strike across a wide front and over the most direct approaches



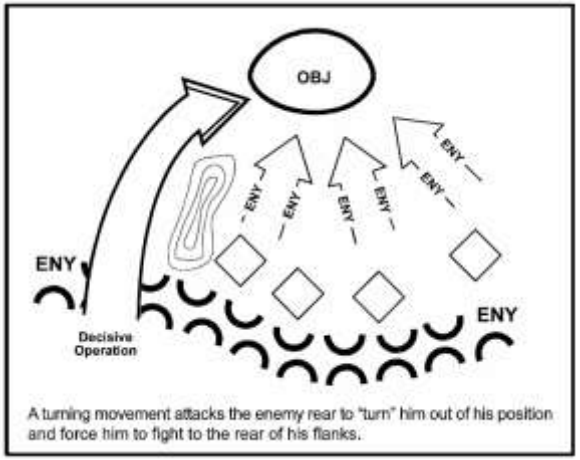
A frontal attack is conducted across a wide front over the most direct approach.

Infiltration: The purpose of an infiltration is to move by stealth to place a maneuver force in a more favorable position to accomplish the mission



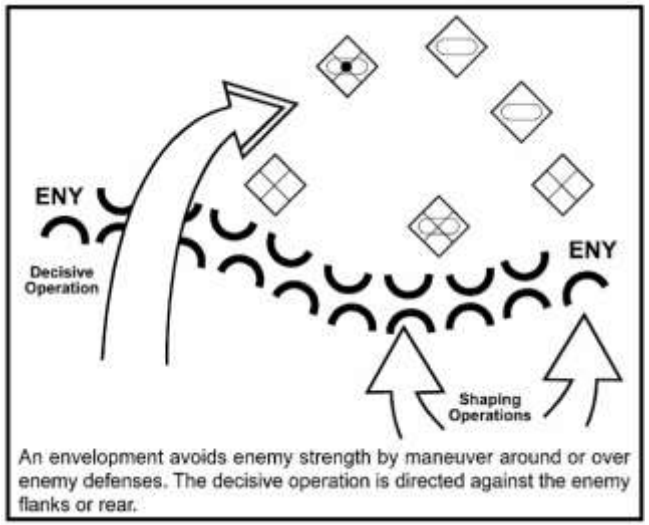
An infiltration uses covert movement of forces through enemy lines to attack positions in the enemy rear.

Turning Movement : Attacker secures key terrain deep in the enemy's rear and along his LOC's



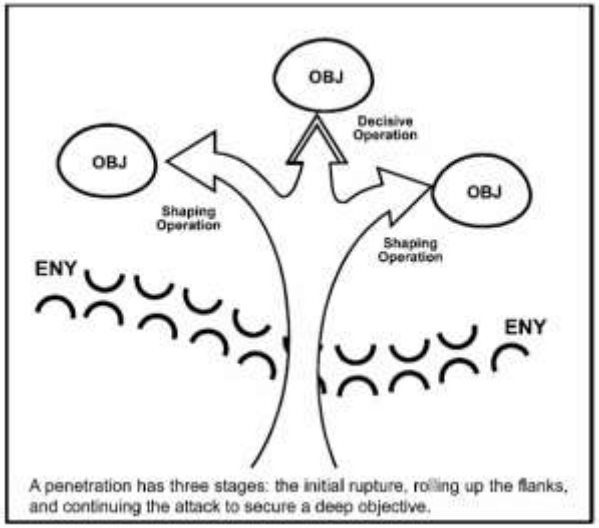
A turning movement attacks the enemy rear to "turn" him out of his position and force him to fight to the rear of his flanks.

Envelopment: Main attacking force passes around or over defenses to secure objectives in the rear



An envelopment avoids enemy strength by maneuver around or over enemy defenses. The decisive operation is directed against the enemy flanks or rear.

Penetration: Mass combat power to overwhelm the enemy and gain the advantage



A penetration has three stages: the initial rupture, rolling up the flanks, and continuing the attack to secure a deep objective.

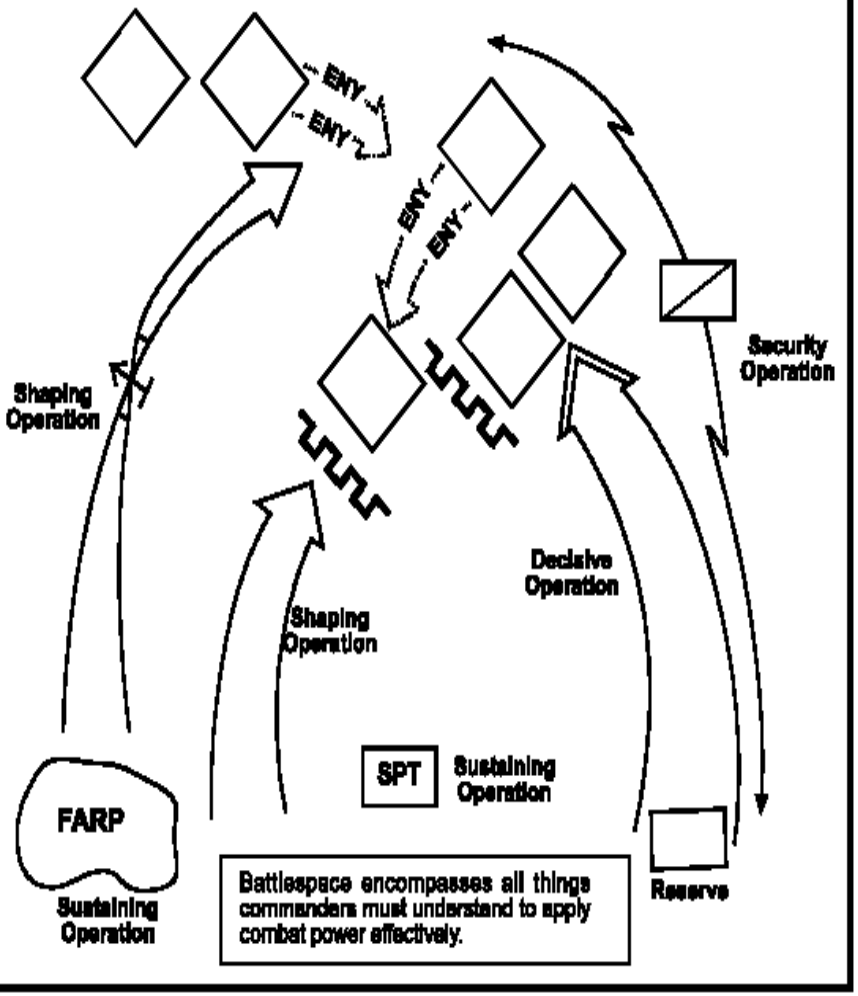


Figure 7-1. Operational Framework in the Offense

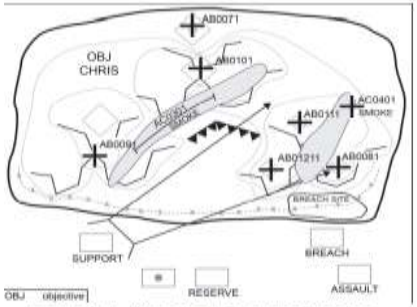


Figure 3-4. Attack of an objective: the breach

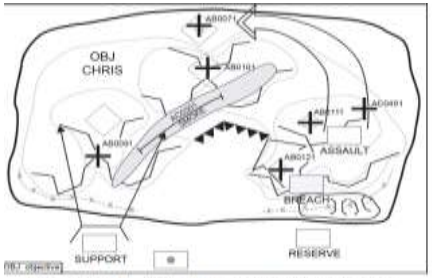


Figure 3-5. Attack of an objective: the assault

SEQUENCE OF OFFENSIVE OPERATIONS FM 3-90.2

a. **Preparation**. The TF conducts extensive reconnaissance of the objective to support the commander's decisions of how to employ his combat power against the enemy. He normally does not make final decisions as to the exact conduct of the operation until ISR operations develop the enemy situation. The commander and staff direct and supervise mission preparations to prepare the TF for the battle. The TF employs security forces to protect and conceal attack preparations from the enemy. Preparation time is also used to conduct precombat checks and inspections, rehearsals at all levels, and CSS activities.

b. **Execution**. Execution generally consists of the following four sequential events: • Movement to the line of departure. • Approach to OBJ • Actions on the OBJ • C&R

The TF then prepares for follow-on missions as directed by higher headquarters.

(1) ***Movement to the Line of Departure***. When attacking from positions not in contact, TFs often stage in rear assembly areas, road march to attack positions behind friendly units in contact with the enemy, conduct passage of lines, and begin the attack. When attacking from positions in direct contact, the line of departure is the same as the line of contact.

(2) ***Approach to the Objective***. The commander and staff plan the approach to the objective to ensure security, speed, and flexibility. They select routes, techniques, formations, and methods (air, mounted, dismounted) that best support actions on the objective. All leaders must recognize this portion of the battle as a fight, not a movement. The TF may have to fight through enemy combat forces, obstacles, artillery strikes, security elements, possible spoiling attacks, and other combat multipliers to reach the objective. The commander employs techniques that avoid the enemy's strength when possible and conceal the TF's true intentions. He tries to deceive the enemy as to the location of the main effort, uses surprise to take advantage of his initiative in determining the time and place of his attack, and uses indirect approaches when available to strike the enemy from a flank or the rear.

(3) ***Actions on the Objective***. During an offensive operation, the TF's objective may be terrain- or force-oriented. Terrain-oriented objectives usually require the TF to seize or secure a designated area. However, to gain a terrain-oriented objective often requires fighting through enemy forces. If the objective is an enemy force, an objective area may be assigned for orientation, but the TF's effort is focused on the enemy's actual location. The enemy may be a stationary or moving force. Actions on the objective start when the TF begins echeloning its fires onto the objective. This action usually occurs with preparatory fires while the TF is still approaching the objective.

(4) ***Consolidation and Reorganization***. The TF reorganizes and consolidates as required by the situation and mission. The consolidation and reorganization plan needs to be as detailed as the assault plan.

(5) ***Follow-On Missions***. The TF executes follow-on missions as directed by the higher commander. The most likely mission is to continue the attack. Other missions may include supporting a passage of lines for a follow-on force, defending, or participating in an exploitation or pursuit. The TF develops plans for follow-on missions based on the higher headquarters' plan, the higher commander's intent, and the anticipated situation.

PHASES FOR ASSAULTS

Strong Point

- Recon the objective and develop the concept
- Move to the objective
- Isolate the objective and the selected breach site
- Attack to secure a foothold
- Exploit the penetration and clear the objective

Task Organization

Support
Breach*
Assault
(Reserve)
*The breach element must also task organize itself into support/breach/assault teams

Urban Operations

Hasty:
- Find a weak spot in the enemy defense
- Fix forward enemy elements
- Rapidly move through / around the weak spot

Deliberate:
- Isolate
  - I. Control avenues of approach
  - II. Heavy use of armor / ATGM / Arty
  - III. Fought outside city
- Assault
  - I. Fix the enemy defense
  - II. Initially supported with armor and engineers
  - III. Use strong point task organization
- Clearance
  - I. Systematic
  - II. Building by building
  - III. Block by block

FOUR STEPS OF ACTIONS ON CONTACT

The team should execute actions on contact using a logical, well-organized process of decision-making and action entailing these four steps:

· Deploy and report.
· Evaluate and develop the situation.
· Choose a COA.
· Execute the selected COA.

Table 5-1. Platoon Battle Drills for Deployment During Actions On Contact

TANK PLATOON DRILLS	MECHANIZED INFANTRY RIFLE PLATOON DRILLS
Change of Formation Drill	React to Contact Drill
Contact Drill	Break Contact Drill
Action Drill	React to Ambush Drill
React to Indirect Fire Drill	Change Formation Drill
React to Air Attack Drill	Execute Action Right or Left Drill
React to a Nuclear Attack Drill	
React to a Chemical/Biological Attack Drill	

HASTY ATTACK - Task Organization
The hasty attack is conducted using the principles of fire and movement :
• Base of Fire Force
• Maneuver Force

DELIBERATE ATTACK - Task Organization
The commander normally conducts a deliberate attack when enemy positions are too strong to be overcome by a hasty attack. :
• Support Force
• Assault Force
• Breach Force

Ambush - Task Organization
The execution of an ambush is offensive in nature. :
• Support Element
•Assault Element
• Security Element

MTC: APPROACH MARCH - Task Organization
A task force or larger unit conducting a movement to contact is task organized into four successive elements:
· Reconnaissance force.
· Advance guard.
· Main body.
· Reserve.

MTC: SEARCH AND ATTACK - Task Organization
A task force organizes his unit into:
• Reconnaissance
• Fixing Force
• Finishing Force

ATTACK BY FIRE - Task Organization
A task force organizes his unit into:
• Blocking Force
• Attack By Fire Force ((Both have their own security element))

SUPPORT BY FIRE - Task Organization
A task force organizes his unit into:
• Security Force
• Suppression Force (Direct, Indirect, CAS, CCA)
• NOTE: May have to Attack to Seize the SBF positions.

FOLLOW AND SUPPORT - Task Organization
The team may be task organized to conduct follow and support missions in one of several ways: It can be part of a task force with the mission of maintaining the momentum of a brigade attack. It can function as a separate maneuver element in support of the movement of another task force element. Platoons within the team may conduct follow and support missions in support of infantry elements (especially during light/heavy operations).

BYPASS- Task Organization
The task force organizes his unit into:
•Reconnaissance force
•Fixing Force
•Bypassing Force
•Supporting Force

CLEAR- Task Organization
The task force organizes unit into:
• Support By Fire Force
• Security Force
• Clear Force

Task Organizations:--Attachment/Detachment/Enabler Integration

- When **attached** to a non-organic headquarters, the following format will be used by the attached unit to brief the gaining unit unless another format is specified
  - Unit Name
  - Introduction to Leadership
    - Position
    - Call signs
    - Special Skills, if applicable
  - Unit's organization (i.e.. Three squads of nine men each, plus an HQ…)
  - Overall unit strength
  - Unit capabilities
  - Unit Limitations
  - Unit equipment
    - Capabilities
    - Limitations
  - Pertinent unit SOPs
  - Issues, concerns, questions
- When **detached** from the company, or when **receiving attachments**, ensure that the gaining unit supplies the attached unit with:
  - Enemy situation
  - General mission brief
  - General timeline for planning/preparation/execution
  - Gaining unit's TACSOP

- In order to better integrate enablers, use the following checklist upon initial receipt of an enabler.
- Enabler Team Leader:
  - Provides capabilities/limitations brief to company leadership
  - Provides trip ticket information to CP
- Company 1SG:
  - Provides tour of firebase
  - Briefs enablers on base defense plan and MASCAL plan
  - Ensures that the enabler has proper life support needs met (sleeping arrangements, etc.)
  - Links enabler team up with appropriate platoon, as applicable.
  - Links enabler team up with Mechanic Team Chief, as applicable.
- Company CDR:
  - Links up with enabler team leader
  - Briefs enemy situation
  - Provides general mission brief
  - Provides general time line for planning/preparation/execution
  - Provides copy of company TACSOP

Attack- PLANNING

When the commander decides to attack or the opportunity to attack occurs during combat operations, the execution of that attack must mass the effects of overwhelming combat power against selected portions of the enemy force with a tempo and intensity that cannot be matched by the enemy. An attack at the company team level is a type of offensive action characterized by close combat, direct fire, maneuver, and support from indirect fires. When the company team commander decides to attack, he must mass the effects of overwhelming combat power against the weak point of the enemy with a tempo and intensity that the enemy cannot match.

•Hasty Attack: Limited preparation and planning time

•Deliberate Attack: Fully synchronized, detailed planning, rehearsals time

•Considerations: *Attack along an axis., Actions at the PLD, Obstacle breaching., Actions on the objective.*

Once the conditions are set (suppression on the objective, obstacles are breached and the assault force is in position), the assault forces maneuver to close with and destroy the enemy. Other task force elements continue to provide support as necessary throughout the assault.

ASSAULT – PLANNING

There are many inherent dangers in an assault: deadly enemy fires; a rapidly changing operational environment; the requirement to execute the assault on short notice; the possibility of fratricide when friendly forces converge. Taken together, these factors dictate that the company team commander and subordinate leaders understand the planning considerations.

- **EN Situation**
- **Scheme of Maneuver**
- **Fire Support**
- **Mobility and Survivability**
- **Set Conditions for the Assault**
- **Isolate the EN FORCE on the OBJ Area**
- **Conduct Actions at the ASSLT POSN or PLD**
- **Breaching During the Assault**
- **Conduct the Above Ground Fight**
- **Conduct the Below Ground Fight (Clear Trenches and Bunkers)**
- **Dismount Point: Short of OBJ, On the OBJ, Beyond the OBJ**
- **Seize the OBJ**
- **Consolidate and Reorganize**

Ambush- PLANNING

An ambush is an attack by fire or other destructive means from a concealed position on a moving or temporarily halted enemy. It may take the form of an assault to close with and destroy the enemy, or it may be an attack by fire only, executed from concealed positions. An ambush does not require that ground be seized or held. Phases of the ambush. An ambush normally consists of the following phases:

· Tactical movement to the objective rally point (ORP).
· Reconnaissance of the ambush site.
· Establishment of ambush site security.
· Preparation of the ambush site.
· Execution of the ambush.
· Withdrawal.

MTC- PLANNING

Movement to contact is an offensive operation designed to gain or regain contact with the enemy. It ends when contact is made. The team may conduct movement to contact prior to occupation of a screen line. (**NOTE**: Contact will result in initiation of another operation such as attack against a stationary or moving enemy force, defense, delay, or withdrawal.

ATTACK BY FIRE - PLANNING

When the team is tasked as the attack by fire force, the commander should obtain the most current intelligence update on the enemy and apply his analysis to the information. He should take the following actions in planning and preparing for the attack by fire operation:

· Conduct LOS analysis to identify the most advantageous locations for attack by fire positions. Commanders in Force XXI can utilize FBCB2 for LOS analysis and the task force S2 can assist in LOS analysis with ASAS light. Some LOS tools may be limited by software capabilities.
· Conduct direct and indirect fire planning and integration.
· Determine triggers for lifting or shifting direct and indirect fires.
· Plan and rehearse actions on contact, as well as maneuver to attack by fire positions.

SUPPORT BY FIRE – PLANNING

The team commander should take the following actions in planning and preparing for the support by fire operation:

· Conduct LOS analysis to identify the most advantageous positions for conducting support by fire.
· Conduct planning and integration for direct and indirect fires.
· Determine triggers for lifting or shifting direct and indirect fires.
· Plan and rehearse actions on contact, as well as maneuver to support by fire positions.
· Plan for large Class V expenditures, especially 25-mm rounds. The commander must consider a number of factors in assessing Class V requirements, including the following:
    - •Desired effects of company team fires.
    - •Composition, disposition, and strength of the enemy force.
    - •Time required suppressing the enemy.

FOLLOW AND SUPPORT - PLANNING

Follow and support forces are employed in the offense to maintain the momentum of an operation. They do this by providing any kind of support or assistance that will relieve the lead element of hindrances that could slow its advance.

· Conduct linkup operations with the lead element's fixing or overwatch force.
· Maintain contact with the enemy that is not destroyed by main effort and complete destruction.
· Destroy pockets of resistance bypassed by the lead element.
· Secure the flanks of a penetration to prevent the enemy from closing the penetration.
· Expand the area of a penetration.
· Secure LOCs.
· Secure key terrain.
· Protect key installations.
· Guard enemy prisoners of war (EPW).

BYPASS - PLANNING

The Unit may bypass an enemy force or obstacle to maintain the momentum of the attack or for another tactical purpose. The task force commander often establishes bypass criteria. The commander first designates a fixing force to maintain contact with the enemy and assist the remainder of the team during the bypass. The bypassing force uses covered and/or concealed routes and, if possible, moves along bypass routes that are outside the enemy's direct fire range. The team can also employ smoke to obscure the enemy or to screen the bypassing force's movement. The team must conduct adequate reconnaissance of the route to confirm the feasibility of the bypass; the enemy may intentionally leave a bypass route unguarded to draw attacking forces into his kill sacks. Once the rest of the team clears the enemy position, the fixing platoon normally hands the enemy over to a supporting force, breaks contact, and rejoins the team. The fixing platoon may also be attached to the follow-on force.

CLEAR A DEFILE – PLANNING

To clear restrictive terrain is both time-consuming and resource intensive. During the planning process, the commander evaluates the tactical requirements, resources, and other considerations for each of the three phases of the operation:

· Approach (the restricted terrain).
· Clear (the area in and around the restricted area).
· Secure (the far side of the objective area).

Cordon and Search

A cordon and search is an operation to isolate an objective in order to search buildings to capture or destroy insurgents and/or contraband. There are two primary types of cordon and search: cordon and kick and cordon and knock. The **cordon and kick** method is used to maintain speed, surprise, and timeliness in entry to the target within the objective. Local population perceptions and integration of ISF are less important than accomplishing the task(s) of capturing the target individual, site, or equipment.
The **cordon and knock** method may be used when the focus is on increasing the legitimacy of the Iraqi government and security forces or when there is no specific intelligence about the objective. When using this method the same principles apply but the patrol will inform the owner of the building prior to entering.

Task organization:

C² Element – Overall control of the operation; Coordinates with enablers; Ensures that Information Operations and consequence management are conducted; Reports to higher headquarters
Security Element – Consists of outer and inner cordon; Primary task is total isolation of target area; Security element leader is responsible for coordination with aviation assets and fire coordination controls to prevent fratricide
Outer cordon – prevents enemy and civilian influence on objective; secures mounted avenues of approach;
Inner cordon – prevents enemy egress from objective area; secures dismounted avenues of approach; acts as immediate reserve for Search/ Assault element
Search/ Assault Element – The search/assault element has three primary tasks: securing, clearing, and searching the target. Initially task organized into two teams, Assault and Security. Once building is cleared the Assault team transitions to Search team and conducts SSE.

Assault Team - responsible for entering, clearing, and searching buildings in order to capture or destroy enemy forces or equipment. The assault team conducts the initial assault into the target and uses speed and violence of action to move through the target to completely clear and seize control of it. The assault team can transition into the search team once the target is cleared (i.e., the assault team clears a house from bottom to top, transitions into the search team, and conducts a search from top to bottom).

Security Team - The security team provides immediate over watch inside the target. The security team also provides immediate security of detainees and noncombatants.

Search Team - Once the target is cleared of combatants and secure, the search team will conduct its primary task of searching the objective to capture or destroy the targeted individuals and/or materials. The search team may be augmented by members of the assault team and by individuals from the security element. The search team leader is responsible for search, documentation, tactical questioning and destruction or confiscation of contraband.

Support Element – If manpower allows, a support element should be designated. The support element reinforces, and is capable of accomplishing, the task and purpose of the unit's main effort. The tasks the support element may be required to execute must be predetermined and prioritized so that the support element leader can plan and rehearse these actions. Probable tasks include (but are not limited to):
(1) Reinforce outer/inner cordon
(2) Clear or search buildings
(3) Secure, safeguard, and escort civilians or detainees
(4) Secure and safeguard captured material or equipment

An Alternate technique for a cordon and search is the "call out". In this technique, an interpreter uses a loud speaker or megaphone to call out personnel from a household or structure you have secured. Personnel are called out in group, searched, and then moved to a secure area. Assets commonly used for this technique are: Interpreter with megaphone, Personnel with thermal sighting system or goggles, Metal Detectors, Chemlites, MWD, and EOD.

Patrol Planning Patrol Procedures Overview

- Receive Mission from Company or Battalion HQs
- Receive Pre-Brief from Company COIST or BN S2
- Implement IH Big 8: Oporder, Graphics, Rehearsals, PCC/PCI, Security, Recon, CRM, Time Mngt
- Issue a WARNO containing a minimum of the 5Ws to all PLT leadership (SL and above)
- Begin Planning for Mission
  - Check daily SIGACTs, INTSUM, GRINTSUM, RTE Status, HVT Listing, BOLO List
  - Look on TIGR Net for any activity in the area
  - Get frequencies of any other patrols or Unit HQs in area
- Write Patrol Brief
- Prepare vehicles for patrol
  - Check COMSEC, FBCB2, Weapons, fuel, CL I, III, and V
- Give Patrol Brief to entire platoon and any elements attached to Platoon for mission (i.e., MWD, TPT, HCT, etc.)
- Conduct Mission
- When EOM, Conduct immediate sustainment ops
  - Refuel all vehicles
  - Restock all expended CL I, III, and V
- Platoon links up with Company COIST and writes patrol debrief
  - Platoon Leader will type debrief while giving details to COIST team
  - COIST team will save on copy of the debrief, e-mail one copy to the S2, and post on copy on TIGR Net

Enabling operations: specialized missions that must be planned and/or conducted in conjunction with ongoing or future reconnaissance and security (R&S) operations to achieve or sustain a tactical advantage.

MOVEMENT

Tactical Road March

Organized into four elements:

1. Reconnaissance Party
2. Quartering Party
3. Main Body
4. Trail Party

The reconnaissance party should be a reconnaissance platoon and a supporting unmanned aerial vehicle (UAV) or other aerial reconnaissance element.

The Recon party's primary tasks are:

-Determine route traffic-ability.

-Identify possible choke points.

-Identify and mark bypasses around OBS; clear OBS within capabilities.

-Systematically report reconnaissance progress in accordance with unit SOP.

-Establish traffic control points, as required.

Quartering Party: The quartering party normally follows the reconnaissance party and also moves by infiltration. The squadron employs a quartering party from the reconnaissance troop—if it plans to occupy an assembly area upon arrival at the march destination.

Main Body: The main body is composed of the bulk of the squadron organized into serials and march units.

Trail Body: The trail party is the last march unit in the squadron serial. It is composed of elements of the combat trains under the squadron maintenance officer.

Assembly Area: A location in which a force prepares or regroups for further action. As a rule, it is secure from threat interference.

Characteristics of an Assembly Area:

- Concealment from air and ground observation.
- Cover from direct fire.
- Defensible positions.
- Openings for positioning UAV launch and recovery assets.
- Space for dispersion of vehicles, personnel, and equipment.
- Good entrances and exits and an adequate internal road or trail network.
- Good drainage, slope, and soil conditions to support vehicles, and equipment.
- Good locations for a landing zone (LZ).

PASSAGE OF LINES

Forward Passage: when an attacking or exploiting force moves through forces in contact.

Rearward Passage: when security forces withdraw through the protected force.

FPOL

Reasons for a FPOL:

Continue the attack or counterattack.

Envelop a threat force.

Pursue a fleeing threat.

Pass between friendly AOs during nonlinear operations

RPOL

Rearward movement is likely to be more difficult because of the following:

The threat probably has the initiative, which tends to reduce the time available to conduct liaison and reconnaissance and make detailed plans.

If the rearward-moving force has been in action, its soldiers are tired and possibly disorganized to some degree.

The threat may be applying pressure on the passing force.

Friendly forces may be more difficult to recognize because threat forces may be intermixed with them.

Relief in Place: an operation in which a unit is replaced in combat by another.

Relief Techniques:

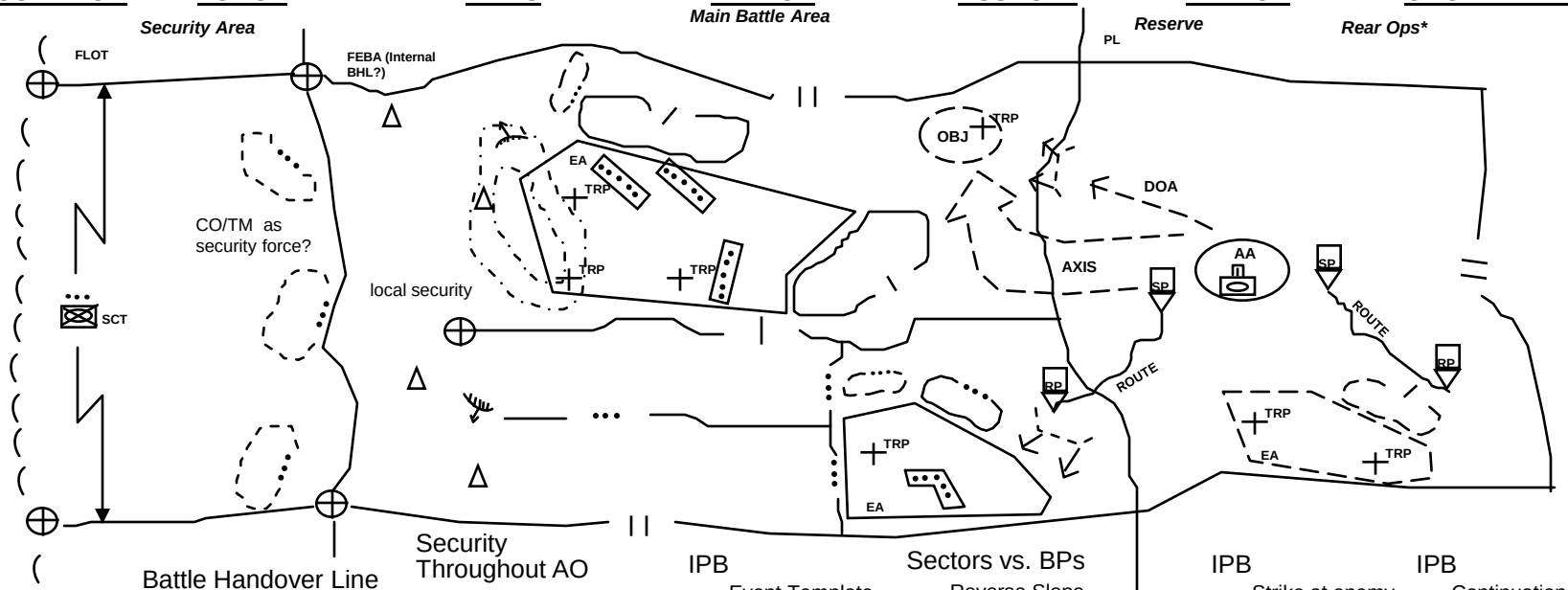
- Sequential
- Simultaneous
- Staggered

PASSAGE OF LINES-Control Measures

- Battle handover line. Established by the common commander in consultation with the commanders of both passage units.
- Contact points. Established forward of the BHL, on identifiable terrain (if available) and normally in the vicinity of the PPs.
- Passage points. Should be concealed from threat observation. Stationary unit guides may meet the passing unit at the PP.
- Passage lanes and passage routes. Restrictive in nature and established by the stationary unit to move the passing unit quickly through the stationary unit's positions.
- Release point. A well-defined point on a route at which the elements composing a march column revert to the authority of their respective commanders, with each element continuing its movement toward its own appropriate destination.
- Assembly area. Allows the passing unit to conduct hasty reorganization and emergency CSS actions. This assembly area is temporary in nature.
- Infiltration points. Units should plan infiltration points for personnel not able to complete the passage with the unit.
- Reconnaissance handover. The actions that occur between two elements to coordinate the transfer of information and/or responsibility for observation (reconnaissance and/or surveillance).

SEQUENCE OF THE DEFENSE

OCCUPATION | **PASSAGE OF THE COVERING FORCE** | **DEFEAT OF ENEMY RECON, INFIL, PREP FIRES** | **APPROACH OF ENEMY MAIN ATTACK** | **ENEMY ASSAULT** | **COUNTER-ATTACK** | **CONSOLIDATION AND RE-ORGANIZATION**



Security
Recon Plan
OPSEC/Deception
FS Plan
Control Measures
IPB
- Enemy Recon
- Enemy Air/Arty/NBC

C2
- Coordination
- Recon/QTR party
- Movement Plan

TLP
- **PLAN**
- **PREPARE**
- **REHEARSE**
- **TIME MGT**

Battle Handover Line (BHL)
Direct/Indirect Fire
OPSEC/Deception
Security Force
- Assist CF/close obstacle
- Gain/Maintain contact
- Disengagement

Security Throughout AO
- Passive/Active
- Patrols/OPs
- OPSEC/Deception

Security Force
- Task/Purpose (Screen/Guard?)
- Assets
- Fire Plan
- CSS SPT
- C2/Unity of CMD
- Disengagement vs. Recon continuation

IPB
- Enemy Recon
- Enemy Air/Arty/NBC
- Event Template/ R&S Plan

IPB
- Event Template (NAI)
- DST (TAI/TPL/DP)

ID Enemy MAIN ATTACK
Shape the Battle
- Obstacles
- Forces
- Fires

Assets
- Fires
- CAS
- Aviation
- All Combat Function/BOS

Spoiling Attack?

Sectors vs. BPs
- Reverse Slope

Mass *Effects* and Concentrate *Forces* Disruption — **Focus** Combat Power at the **Decisive Point**

Act Don't React
- Make the enemy react to you

Mass Effects

Fire Support, Direct Fire, Control — **Focus, Distribute, Shift**

Use Obstacles to support your fire plan

IPB
- Strike at enemy "*Culminating Point*"

Who Conducts?
- Reserve at all levels?
- Size?
- Local CATK by forces in contact

Planned/ Prepared
- Priorities (task/purpose for each)
- Criteria/ Decision Point
- Rehearsal

Shift Resources?
Contingencies

IPB
- Continuation of enemy fight

Exploit Successes
Consolidate =
- Prep to continue the fight

Reorganize =
- Restore C2
- Build Combat potential

Force Protection
- CSS integration
- CSS prep/rehearsal

DEFENSE CHEAT SHEET

Sequence of the fight:

1) Recon/counter recon fight
2) Enemy preparatory fires
3) Occupation
4) Enemy approach
5) Enemy assault
6) Counterattack
7) Consolidation and reorganization

Engagement Area Development (prior to the fight):

1) ID enemy avenues of approach
2) Determine enemy scheme of maneuver
3) Determine engagement area
4) Place direct fire weapon systems
5) Integrate obstacles
6) Integrate indirect fires
7) Rehearse

Adjacent Unit Coordination:

1) Enemy SITEMP
2) Friendly positions, BPs, CPs
3) OPs and patrol routes
4) Overlapping fields of fire responsibilities
5) TRPs
6) Alternate, supplementary, and subsequent BPs
7) Indirect fire plan
8) Obstacles
9) Routes
10) Anything else you can think of that is pertinent

Critical C2 Graphics & Measures

1) Battle Positions (primary, alternate, etc)
2) Engagement Area w/ Trigger Line and Disengagement Line
3) Final Protective Fire
4) Forward Edge of the Battle Area
5) Main Battle Area (FLOT to FEBA)
6) Forward Line of Own Troops

Characteristics of the Defense:

1) Preparation
2) Security
3) Disruption
4) Mass & Concentration
5) Flexibility
6) Maneuver (survivability moves)
7) Operations in Depth

Weapons Placement Considerations:

1) Depth and dispersion
2) Flank positions
3) Reverse slope positions
4) Displacement criteria and plan
5) Cover, concealment, and deception
6) Achieve LOCAL fire superiority
7) Reserve employment

Direct Fire Planning Ranges:

M1A2 120mm – 2500m (best), max 4000m
M1A2 COAX – 900m
BFV TOW – 2500-3700m (best), 4200m (AERO) *Note: requires 12-14 seconds of tracking*
BFV 25mm – 2500m max
BFV COAX – 900m
Javelin – 2000m (regular) 2500m (improved)
AT-4 – 300m (max)
M240B – 900m

Final Protective Fire Standard widths:

120mm Mortar – 4 guns – 200x60
155mm How. – 4 guns – 200x50

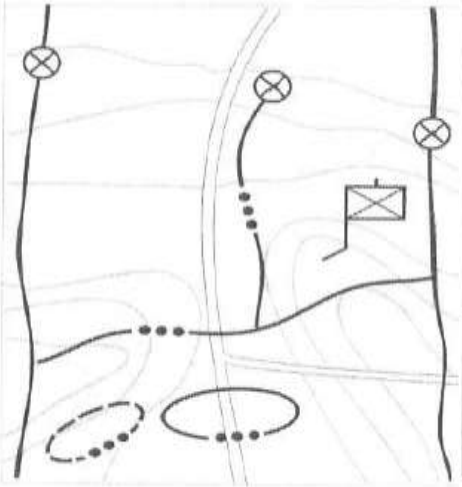
Standard Artillery Response Times:

Unplanned Target of Opportunity – 5-7 Min
Preplanned Mission – 3 Min
Preplanned Priority Mission – 1-2 Min
Note a standard attack speed of 40 km/h will travel 1.5 km every 90 seconds

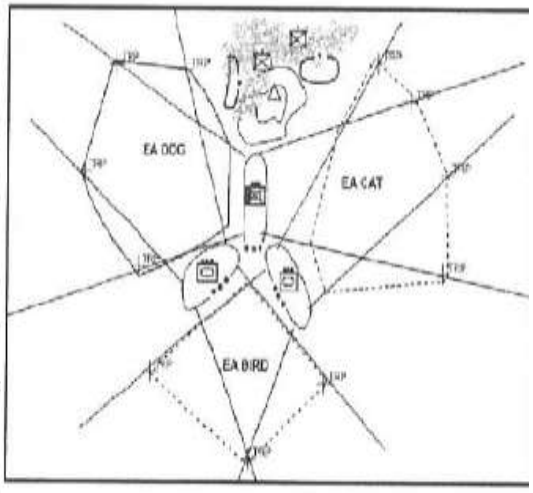
TLP Considerations:

1) Frontload recon and establish security early and forward enough to be of value
2) A series of WARNO's with frontloaded detail is better than waiting until the OPORD.
3) Vital rehearsals: occupation of BPs (time it), resupply CL V, CASEVAC
4) Assign responsibility for obstacles and ensure that leader supervises
5) Include engineer assets into your sustainment plan – ACEs, HMEE, and DOZERs need CL IIIB

DEFENSIVE TECHNIQUES

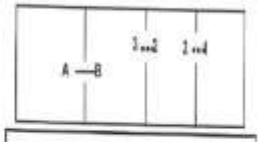


Defense in Sector

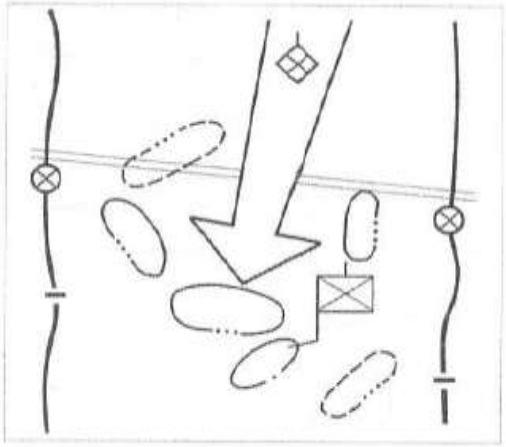


Perimeter Defense

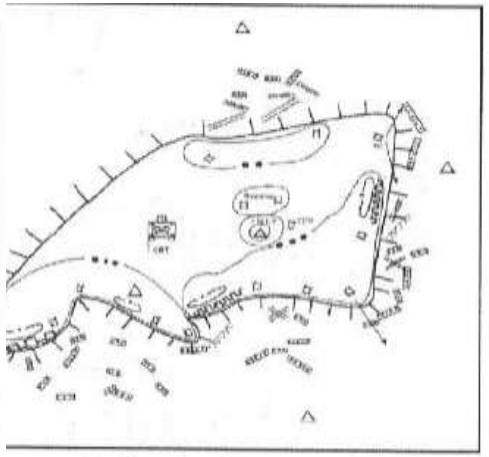
BATTLE POSITION OR SECTOR?
DEFENSIVE CONSIDERATIONS



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



Defend a Battle Position



Defend a Strongpoint

5 Types of Battle Positions.

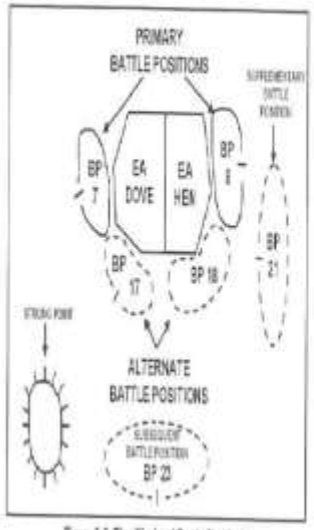
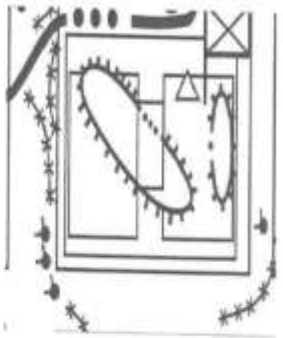


Figure 8-8. Five Kinds of Battle Positions

FM 3-90, p. 8-9

STRONG POINT



Defensive Procedures to Build CO/TM Defense

1. **Issue Warning Order #1 based on TF Warning Order**
2. **Initiate movement to AA or BP**
3. **Initiate PCCs/PCIs**
4. **Conduct initial recon of EA/sector with TF CDR**
5. **Issue CO/TM Warning Order #2**
6. **Conduct CO/TM leader's recon of EA/sector**
7. **Develop an initial CO/TM fire plan**
8. **Finalize positions and obstacle locations**
9. **Occupy the CO/TM BP or sector**
10. **Attend the TF OPORD (could happen at any point during process)**
11. **Complete the plan**
12. **Rehearse the plan**
13. **Finalize the CO/TM fire plan**
14. **Prepare positions**
15. **Recon alternate and supplementary positions**
16. **Update changes and information with FRAGOs**
17. **Continue to prepare the sector/BP**

CALL 96-7, pg. 9

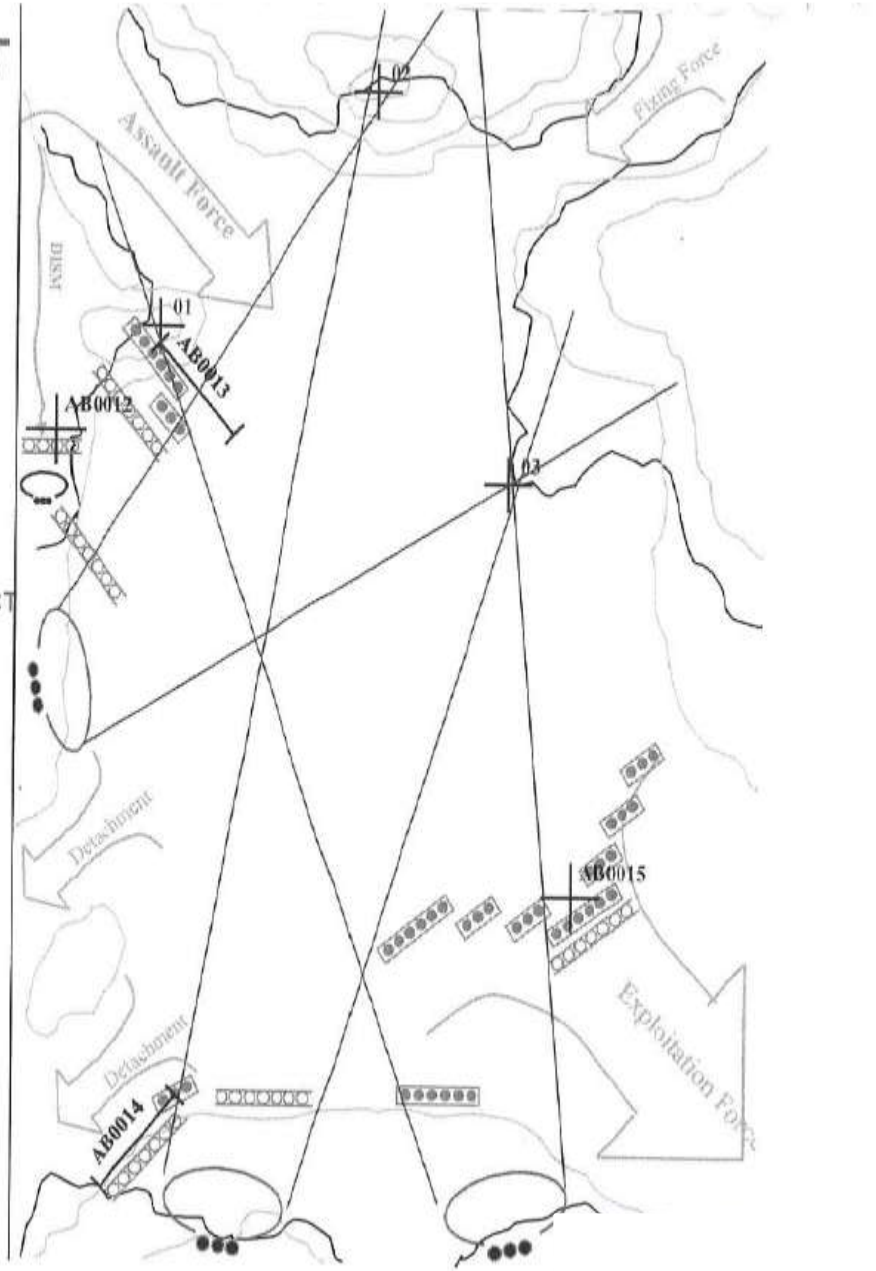
WEAPONS POSITIONING DEPTH & DISPERSION

- TOW Missiles: best employed at ranges of 2500m to 3700m to allow for a 12 sec. TOF
- Tanks: best employed where they can engage the enemy at a range of 2,500m (1800m to 2800m for midrange fires)
- BFVs: 2500m or less from flank positions focused on lightly armored vehicles and infantry or fix/severely limit tank movement.
- Javelins: Best employed from 65m to 2000m, use to destroy enemy mechanized forces, fortifications, or helicopters
- Mk-19: Best employed against troops in the open between 18m & 1800m, and to cover dead space
- M-2 MG: Max effective range of 2000m, best used against enemy lightly armored or thin-skinned vehicles or infantry

FM 3-90.1, p. 6-3

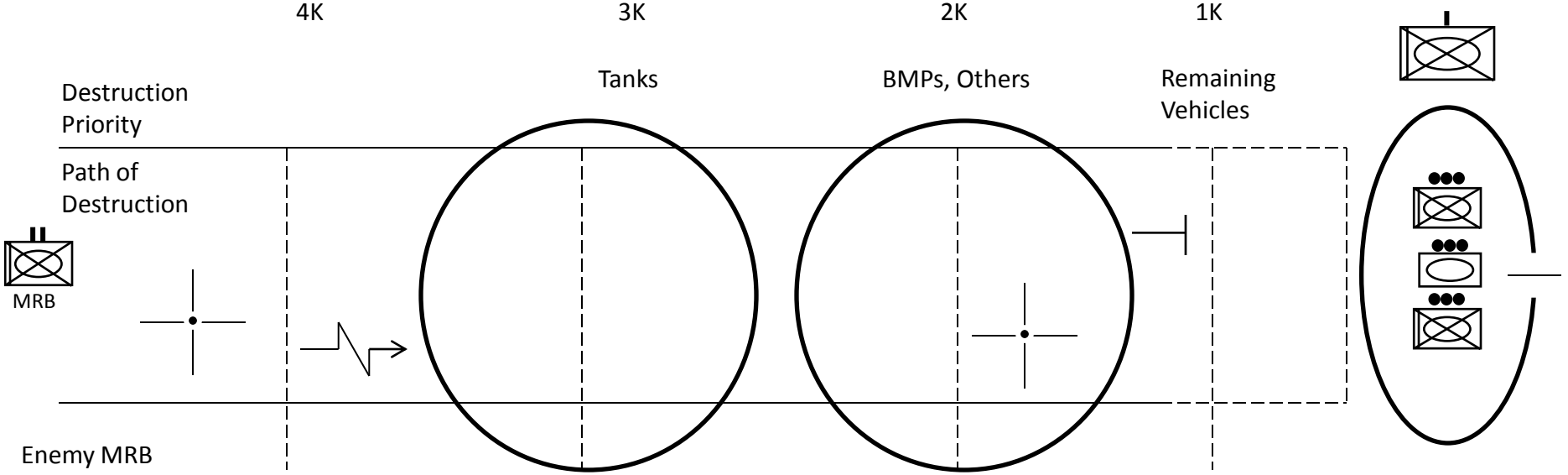
STEPS IN EA DEVELOPMENT

- ID ENEMY AAs
  - Where can enemy go?
  - Where does enemy want to go?
- DETERMINE ENEMY SCHEME OF MANEUVER
  - Where does enemy want to go?
  - Where will enemy go?
  - Mission?
  - OBJ's (I&S)
- DETERMINE WHERE TO KILL THE ENEMY
  - My task and purpose
  - Where best able to achieve? (Terrain & Enemy)
- EMPLACE WEAPONS SYSTEMS/INTERGRATE (DIRECT FIRE)
  - Mutual support
  - Over watch obstacles
  - Cover & concealment
  - Command & control
  - Depth
  - Dispersion
- PLAN & INTEGRATE OBSTACLES
  - Covered by direct & indirect fires
- PLAN & INTEGRATE INDIRECT FIRES
  - Integrated with obstacles & direct fire
- REHEARSE ACTIONS IN EA
  - Direct fire plan
  - Engagement criteria



DISCIPLINE FIRES
EA MATH
"TTP"

EXAMPLE



Systems / Rounds Fired / Kills = Threat Systems Killed

*Weapon probability data varies from unit to unit.
Assumptions must be made

ASSUMPTIONS

* Assumptions will vary with each unit. Assumptions are based on unit proficiency from historical data. This example is purely generic and is based on flat terrain. Combat multipliers (fires, obstacles, ect.) have not been considered.

TOW	TANK	25MM	DRAGON
1. Probability of TOW kill between 3000M and 3700M is 30%	1. Probability of tank kill between 3000M and 2000M is 60%	1. Probability of 25MM kill between 2000M and 1000M is 60%	1. Probability of Dragon kill under 1000M is 50%
2. Probability of TOW kill between 3000M and 2000M is 50%	2. Probability of tank kill between 2000M and 1000M is 66%. Increase due to decrease in range	2. Probability of 25MM kill under 1000M is 75%	
3. Probability of TOW kill between 1000M and 2000M is 50%	3. Probability of tank kill under 1000M is 75%		
4. Probability of TOW kill under 1000M is 90%. Increase due to decrease in range.	*CTC data not FM 17-12-1		

General Assumptions:

1. The enemy rate of movement is 3 minutes per kilometer
2. Weapons system probability is based on unit gunnery proficiency and NTC live fire data
3. Example assumes that we will engage the enemy lead vehicles when he enters the maximum effective range of TOWS. Tanks will be engaged first.
3. Over 90% of enemy vehicles will be destroyed beyond 1,500 meters from example position
4. Change the majority of M2s to fire 25MM when the enemy approaches the maximum effective range of 25MM
5. Discussion of which threat system to engage with friendly system will effect % probability of kill (PK) on METT-TC
6. Example assumes different weapon systems will fire a specified number of rounds between each 1000M increment

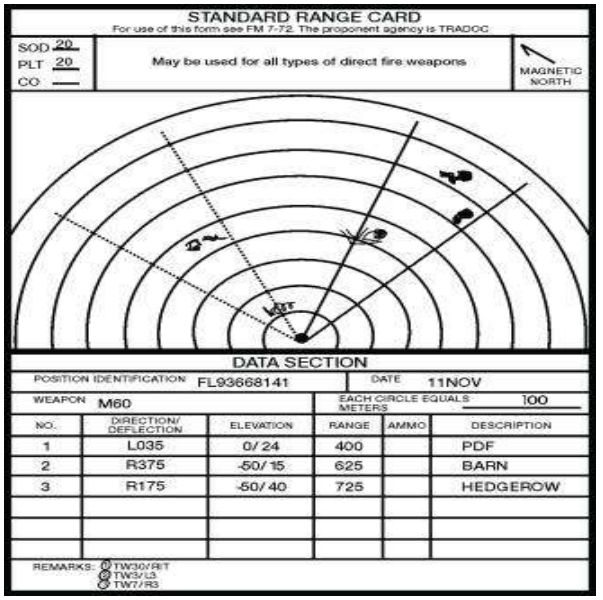
LDR RECON

LDR's RECON
Company Commander
Platoon Leaders
Platoon Sergeants

LDR's RECON Equipment
BINO's
DAGER
20 Pickets per CDR
TRP's (2 per PLT)
Color Coded Chemlites
Engineer Tape
3x5 Index Cards (hasty range card)

TRP Placement
-1 at Decisive Point (3000m), 1 at 2000m, 1 at 1000m
- Move to left or right and determine where to concentrate fires
- Design TRP's by how you want to kill the enemy (at MEL's)
- No more than 2 TRP's at the CO Level
- TRP's must be oriented same direction as M2's
-Dig Priorities
-BFIST
-C2 VEH (66)
- Tanks
- Brads

RANGE CARD


STANDARD RANGE CARD
For use of this form see FM 7-72; The proponent agency is TRADOC

SOD 20
PLT 20
CO

May be used for all types of direct fire weapons

MAGNETIC NORTH

DATA SECTION

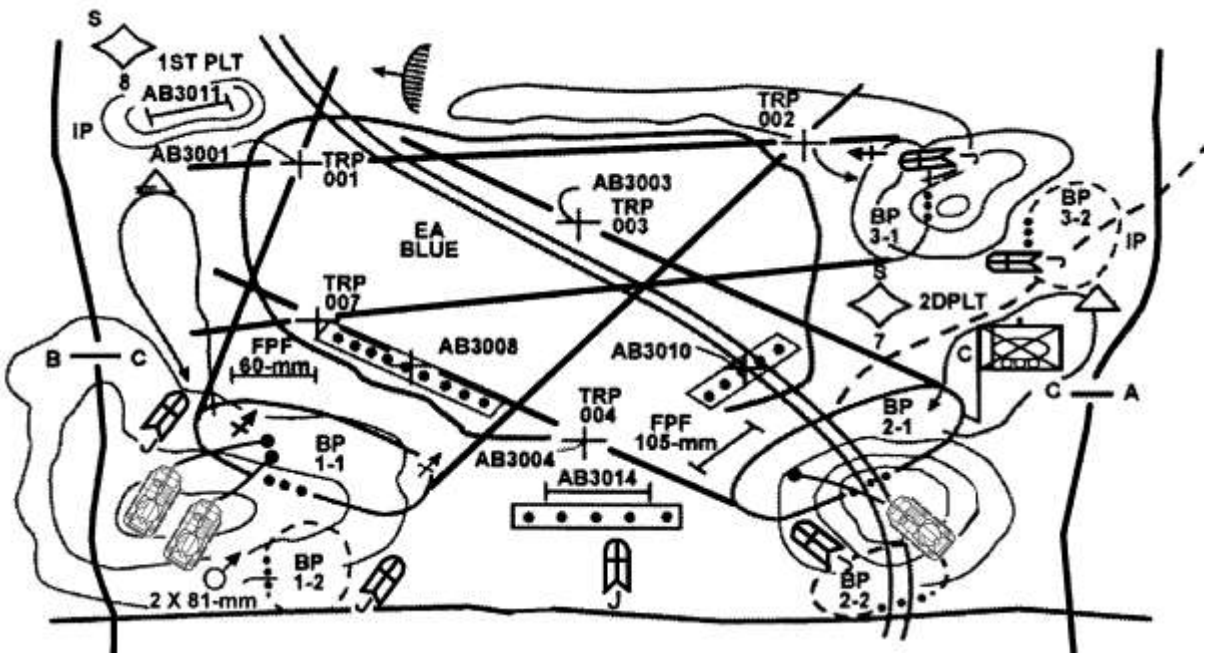
POSITION IDENTIFICATION: FL93668141 DATE: 11NOV

WEAPON: M60 EACH CIRCLE EQUALS METERS: 100

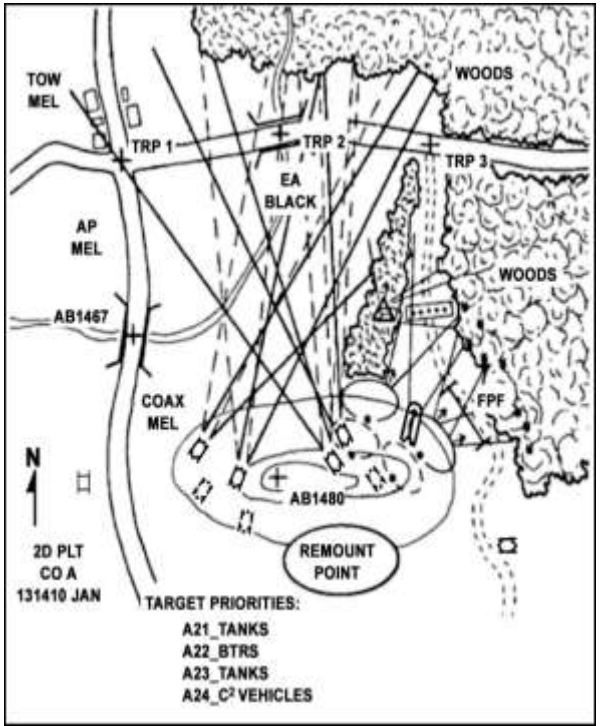
NO.	DIRECTION/ DEFLECTION	ELEVATION	RANGE	AMMO	DESCRIPTION
1	L035	0/ 24	400		PDF
2	R375	-50/ 15	625		BARN
3	R175	-50/ 40	725		HEDGEROW

REMARKS: TW3O/RT, TW3/LT, TW7/RS

COMPANY SECTOR SKETCH



PLATOON SECTOR SKETCH

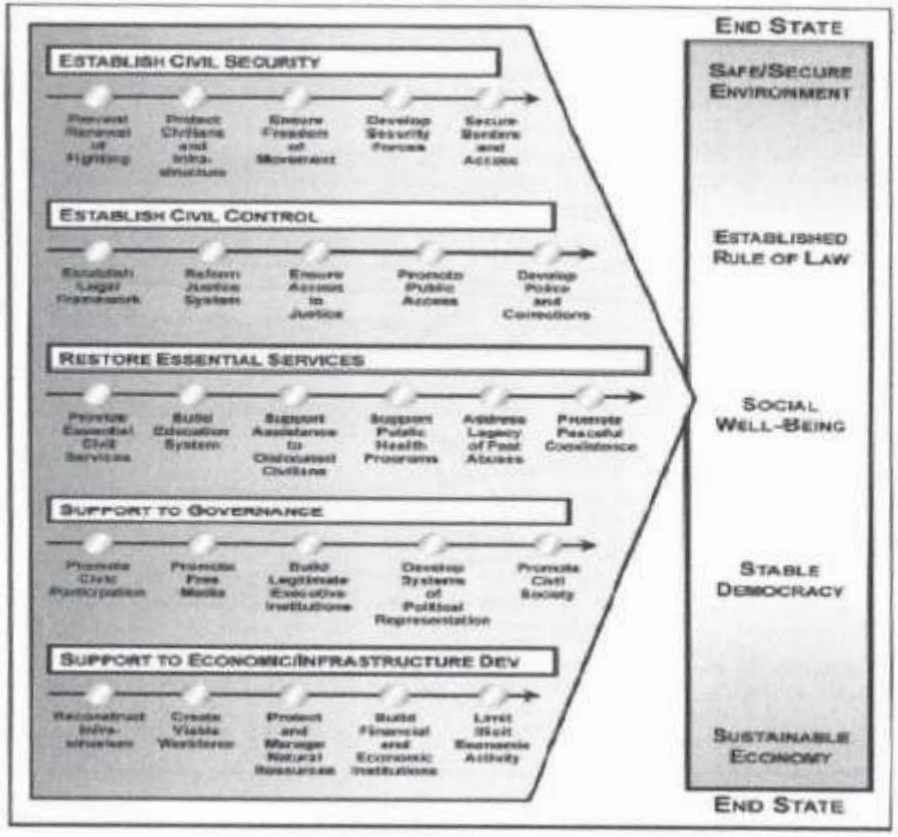


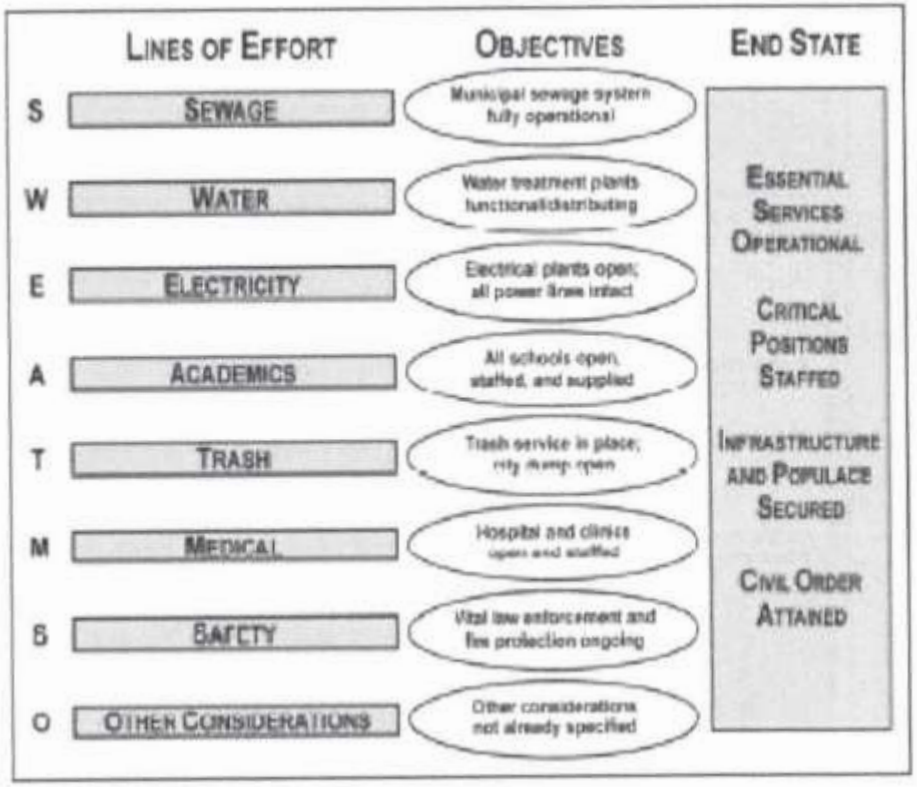
STABILITY OPERATIONS

ESSENTIAL STABILITY TASKS:
- Establish Civil Security
- Establish Civil Control
- Restore Essential Services
- Support to Governance
- Support to Economic and Infrastructure Development

FUNDAMENTALS OF STABILITY PLANNING:
- Reduce Complexity
- Inculcate an Offensive Mindset
- Anticipate Future Events
- Balance Resources, Capabilities, and Activities
- Shape a Positive Future
- Recognize Time Horizons
- Understand the Pitfalls

LINES OF EFFORT





COUNTERINSURGENCY OPERATIONS

Principles Of Counterinsurgency

- Legitimacy
- Unity of Effort
- Political Factors
- Environmental Awareness
- Intelligence Led
- Insurgent Isolation
- Security
- Long-Term Commitment
- Manage Information & Expectations
- Measured Force
- Learn & Adapt
- Empower the Lowest Levels
- Host Nation Support

FM 3-24 Page 1-20 to 1-26

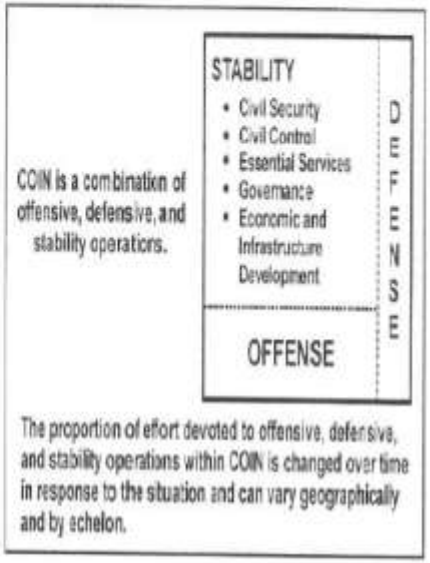


Figure 1-1. Aspects of counterinsurgency operations

FM 3-24 Page 1-19

Paradoxes Of Counterinsurgency

- The more you protect your force, the less secure you are.
- The more force used, the less effective it is.
- The more successful COIN is, the less force that can be used and the more risk that must be accepted.
- Sometimes doing nothing is the best reaction.
- The best weapons for COIN do not shoot.
- The host nation doing something tolerably is sometimes better than us doing it well.
- If a tactic works this week, it might not work next week; If it works in this province, it may not work in the next.
- Tactical success guarantees nothing.
- Most of the important decisions are not made by Generals.

FM 3-24 Page 1-22-23

COUNTERINSURGENCY OPERATIONS

Elements of Insurgency *FM 3-24 Page 1-10*

- **Leaders** – May be held by strength of character, clan, tribal or religious authority. They usually exercise leadership through force of personality.
- **Combatants** – They do the actual fighting and provide security. They exist only to support the insurgency's broader political or religious agenda.
- **Political Cadre** – They are the core of the insurgency as they implement guidance and procedures articulated by the leadership and are actively engaged in the struggle to accomplish the insurgencies goals.
- **Auxiliaries** – Are active sympathizers who provide important support services. They may run safe houses or store weapons and supplies, but do not participate in direct action.
- **Mass Base** – They are the followers of the insurgent movement, the supporting populace where recruits and security are sought. They may also be part time members of the insurgency in the above roles and lead double lives.

- **Insurgent Approaches (FM 3-24, p. 1-5)**
  - Conspiratorial
  - Military-Focused
  - Urban
  - Protracted Popular War
  - Identity-focused
  - Composite and Coalition
- **Insurgent Means of Mobilization (FM 3-24, p. 1-8)**
  - Persuasion
  - Coercion
  - Reaction to Abuses
  - Foreign Support
  - Apolitical Motivations
- **Insurgent Vulnerabilities (FM 3-24, p. 1-14 to 1-15)**
  - Secrecy
  - Mobilization
  - Base of Operations
  - Financial Weakness
  - Internal Divisions
  - Maintaining Momentum
  - Informants

28 FUNDAMENTALS OF COIN

- Know your turf
- Diagnose the problem
- Organize for Intelligence
- Organize for inter-agency operations
- Travel light and harden your CSS
- Find a political/cultural adviser
- Train the squad leaders; then trust them
- Rank is nothing; talent is everything
- Have a game plan
- Be there
- Avoid knee jerk responses to first impressions
- Prepare for handover from day one
- Build trusted networks
- Start easy
- Seek early victories
- Practice deterrent patrolling
- Be prepared for setbacks
- Remember the global audience
- Engage the women; beware the children
- Take stock regularly
- Exploit a single narrative
- Local forces should mirror the enemy; not ourselves
- Practice armed civil affairs
- Small is beautiful
- Fight the enemy strategy; not his forces
- Build your own solution; only attack the enemy when he gets in the way
- Keep your extraction plan secret
- Whatever else you do, keep the initiative

Successful Practices	*Unsuccessful Practices*
• Emphasize intelligence. • Focus on the population, their needs, and security. • Establish and expand secure areas. • Isolate insurgents from the population (population control). • Appoint a single authority, usually a dynamic, charismatic leader. • Conduct effective, pervasive psychological operations. • Provide amnesty and rehabilitation for insurgents. • Place police in the lead with military support. • Expand and diversify the police force. • Train military forces to conduct counterinsurgency operations. • Embed special operations forces and advisors with indigenous forces. • Deny the insurgents sanctuary. ¶	• Place priority on killing and capturing the enemy, not on engaging the population. • Conduct battalion-sized operations as the norm. • Concentrate military forces in large bases for protection. • Focus special operations forces primarily on raiding. • Place a low priority on assigning quality advisors to host-nation forces. • Build and train host-nation security forces in the of the U.S. Army's image. • Ignore peacetime government processes, including legal procedures. • Allow open borders, airspace, and coastlines.

CONVENTIONAL COG ANALYSIS	**COIN COG Analysis**
THE OBJECTIVE IN CONVENTIONAL WAR IS DESTROYING OR DEFEATING YOUR OPPONENT.	THE OBJECTIVE IN COIN IS TO DENY INSURGENTS ACCESS TO THE POPULATION
COG Force's main internal strength. The main striking force given the mission. (e.g. Sunni Arabs)	COIN COG Aspect of the population or person; which is the source of strength, or strength, that is needed to accomplish OP OBJ (e.g. Sunni Arabs)
Critical Capability (CC) is an action (verb) that the *Center of Gravity* does (e.g. Provide Passive or active support, Destabilize)	COG Enabler (CGE) is a thing or person/s (noun) that the Force needs to get, maintain, or sway the Center of Gravity (e.g. "IO campaign," "the influence of local Sunni leaders", "Mosques for Indoctrination.")
Critical Requirements (CRs) are resources, conditions, or means (noun) needed by the COG (ME) to accomplish its *Critical Capability* (actions)	Principal Facilitator (PF) are actions or things (verbs and/or nouns) used by the force to utilize, acquire, develop, or access the CGE. (i.e. "use techs for IO (websites, etc)," "bribe/coerce local Sunni leaders," "obtain support of Imam")
Critical Vulnerability (CV) are those aspects or components of the *Critical Requirement*, that are deficient, or vulnerable to neutralization or defeat in a way that will contribute to a *Center of Gravity* failing to achieve its *Critical Capability*. (?????)	Counter Facilitators (CF) are actions (verbs) of WHAT to do to neutralize the Principal Facilitator. (i.e. "build company and hire techs," "engage or protect local Sunni leaders," "Iraqi Government engages local Imam")
Operation WHAT to do (???????).	Operation HOW to do it (e.g. "fund Iraqis to build," "MNF-I CMO," "how to engage Imam," "train Iraqi PSD/security")

Elements of Combat Power

Intelligence: Tasks and systems that facilitate understanding of the enemy, terrain, weather, and civil considerations. The intelligence WFF focuses on four primary tasks: Support to situational understanding; support to land power and full spectrum operations; conduct intelligence surveillance reconnaissance (ISR); Provide intelligence support to targeting.

Mission command: Tasks and systems that support commanders in exercising authority and direction. It includes those tasks associated with acquiring friendly information, managing all relevant information, and directing and leading subordinates. The two components are: the commander and the C2 system.

Information: Information is not a separate WFF. It is embedded in all the war fighting functions. Each WFF uses information to produce combat power, either directly, as in the case of fires, or as an enabler, as in the case of C2. In the past, commanders developed the situation to gain information.

Movement and maneuver: Tasks and systems that move forces to achieve a position of advantage in relation to the enemy. Means by which commanders mass the effects of combat power to achieve surprise, shock, momentum, and dominance.

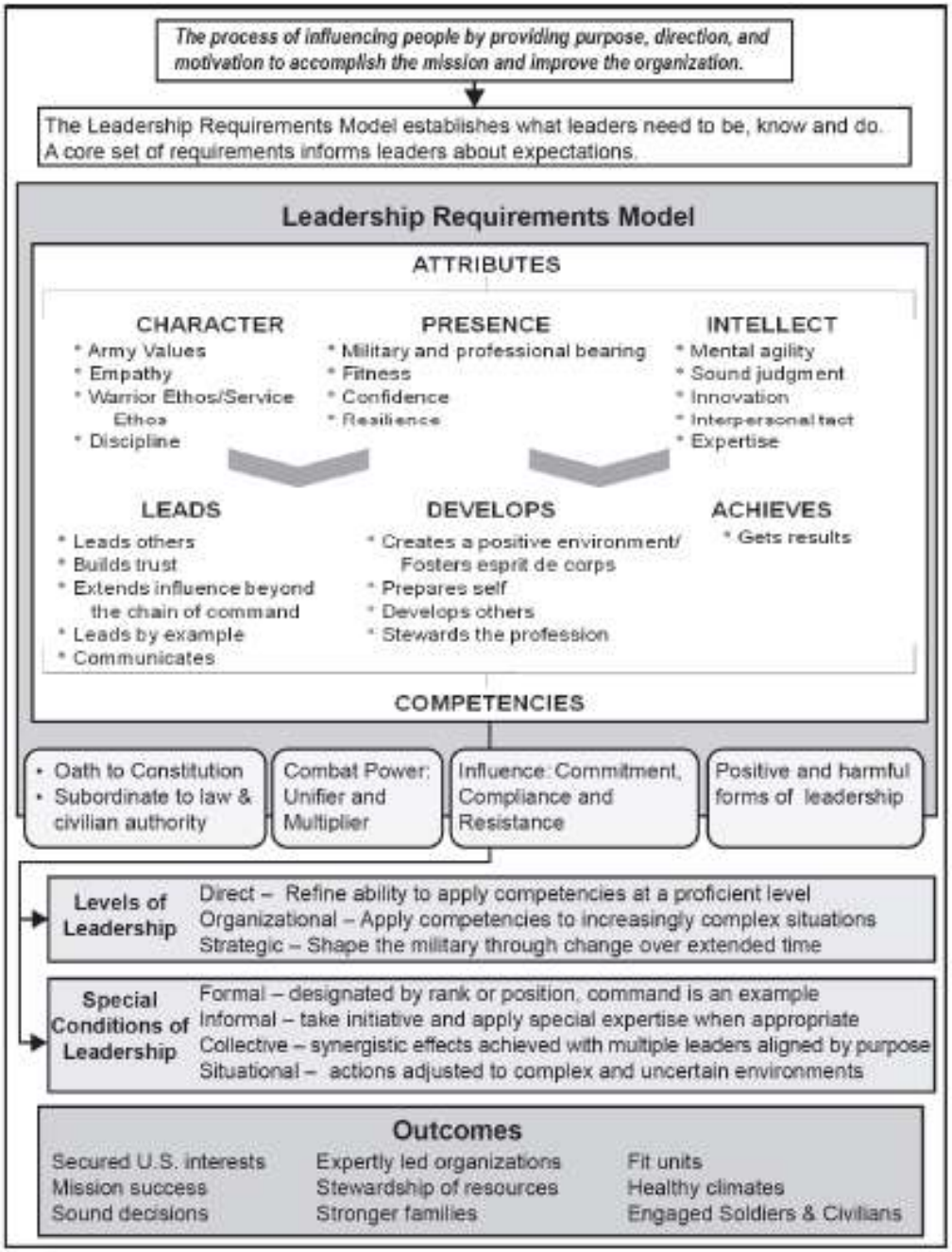
Fires: Tasks and systems that provide collective and coordinated use of Army indirect fires, joint fires, and offensive information operations. Lethal and nonlethal fires, including offensive information operations, are integrated into the concept of operations during planning and targeting based on the targeting guidance. The three types of the fire support war fighting tasks are: Fire support command and control (C2); target acquisition systems and assets; fire support assets and resources.

Sustainment: Tasks and systems that provide support and services to ensure freedom of action, extend operational reach, and prolong endurance. Associated tasks: maintenance; transportation; supply; field services; explosive ordnance disposal; human resources support; financial management; force health protection; legal support; religious support; band support; enemy prisoner of war support; and related general engineering.

.

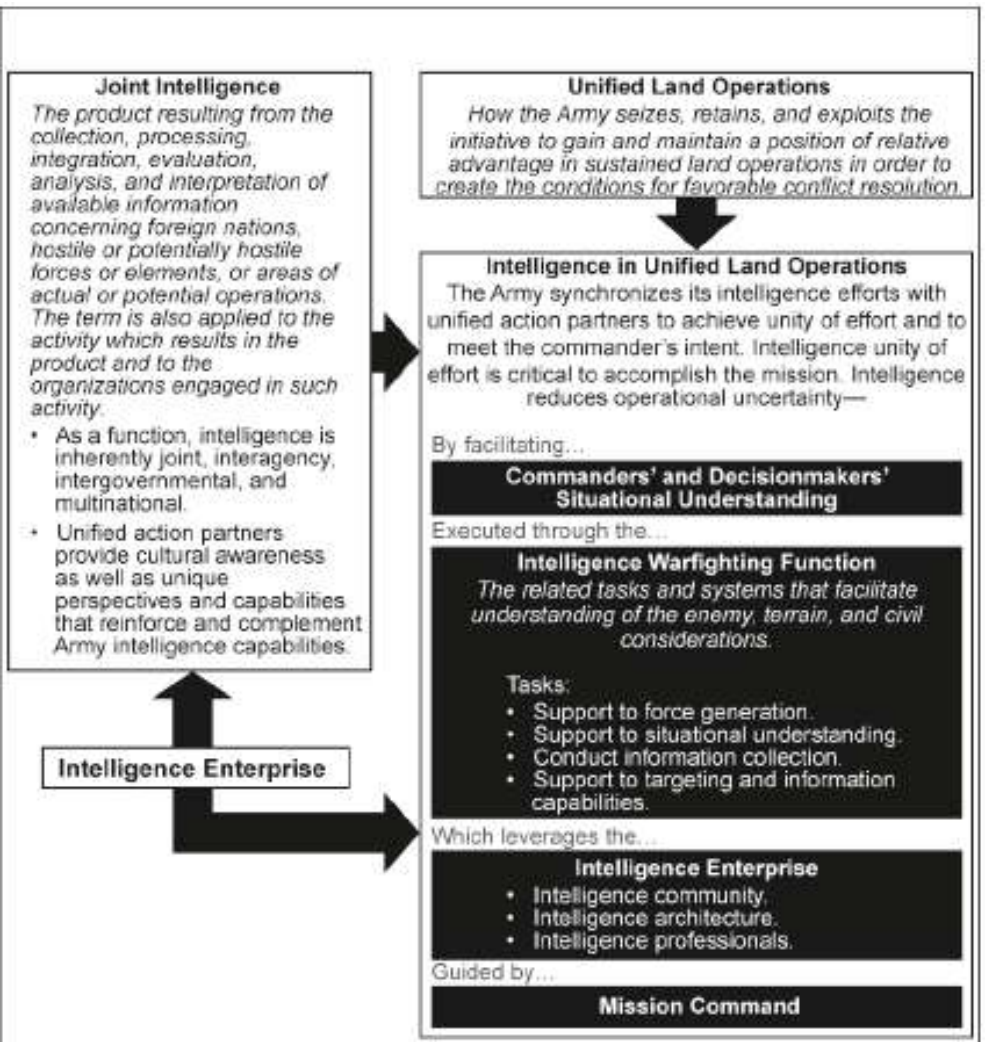
Protection: Tasks and systems that preserve the force so the commander can apply maximum combat power. Preserving the force includes protecting personnel (combatant and noncombatant), physical assets, and information of the U.S. and multinational partners. It includes the following tasks: safety; fratricide avoidance; survivability (including the use of smoke and obscurants); air and missile defense; antiterrorism; counter proliferation and chemical, biological, radiological, nuclear and high-yield explosives weapons; defensive information operations; and operational area security.

Leadership



***Leadership is the process of influencing people by providing purpose,* direction, and motivation to accomplish the mission and improve the organization.**

INTELLIGENCE



UAS CAPABILITIES

HUNTER:
- Time on station /Range -- 12 hours @ 70 kts
- Range – 100 nm / 15,000' ceiling
- Launch and Recovery – 2,500' hard surf.
- Primarily imagery (EO & IR) / (weapons capability is pending)

RAVEN:
- Time on station /Range – 80 minutes @ 60mph
- Range – 10 km / 15,000' ceiling
- Launch by hand / Brigade Level Asset
- Can fly preprogrammed GPS routes or hand-flown

SHADOW:
- Baseline of 12 hour operations per 24 hour period. Has capability to surge for 18 hours within a 24 hour period for no more than three days (the next day only 8 hours)
- Take-off and landing from a 100 m x 50 m size area (Soccer Field)
- Has a 50 km range with 4-hour on station endurance
- Automated landing system
- EO/IR imagery payload for both day and night operations GCS with two operator positions; AV operator and mission payload operator
- Nominal altitude is 8000-10000 ft AGL for Day operations; 6000-8000 ft AGL at night
- Nominal standoff to acquire targets is 3000 meters
- Can launch and recover in crosswinds from 0 to 20 knots
- Operate in moderate precipitation conditions (up to .2 inches per hour)

Limitations
- Unique operational signature; Launch/Recovery site has large signature and vulnerable to attack
- Limited operational capability; Not capable of 24 hour operations; Crew Endurance guidelines are : Maximum duty day - 14 hrs; Maximum flight time - 10 hrs
- Limited loiter time; At 50 km range only has 4 hour loiter time
- Limited payload of 60 lbs
- Altitude is limited to 15,000 ft MSL; vulnerable to ADA in high elevations
- Operates off of MOGAS

PREDATOR:
- Time on station /Range – 24 hours @ 60-130 mph
- Range – 400 nm / 25,000' ceiling
- Launch and Recovery – 5,000' hard surf.
- Recon, target acquisition, laser designation, weapon firing, imagery

Airspace Control Measures (ACM)
- Airspace Management principles apply to UAV operations
- Difference between UAV and manned aircraft is that UAVs can not "see and avoid" so visual flight rules do not apply; ACMs are critical to provide safe separation of all aircraft and avoid fratricide
- ACMs include:
  - Positive control (AWACs, radar control, etc.)
  - Procedural control (ACAs, MRR, ROZ, etc.)
- ACMs for UAV
  - Air Corridors for flight paths
  - Restricted Operating Zones (ROZ)
  - Informal ACA (lateral, time, altitude, or combination thereof separation)
  - UAV Blanket:
    - Most flexible and responsive Procedural de-confliction
    - Manned aircraft passing thru Blanket altitude follow "See and Avoid" principle or an informal, on-the-spot ACA
    - ROZ established on L/R, UAV follows Air Corridor to the blanket

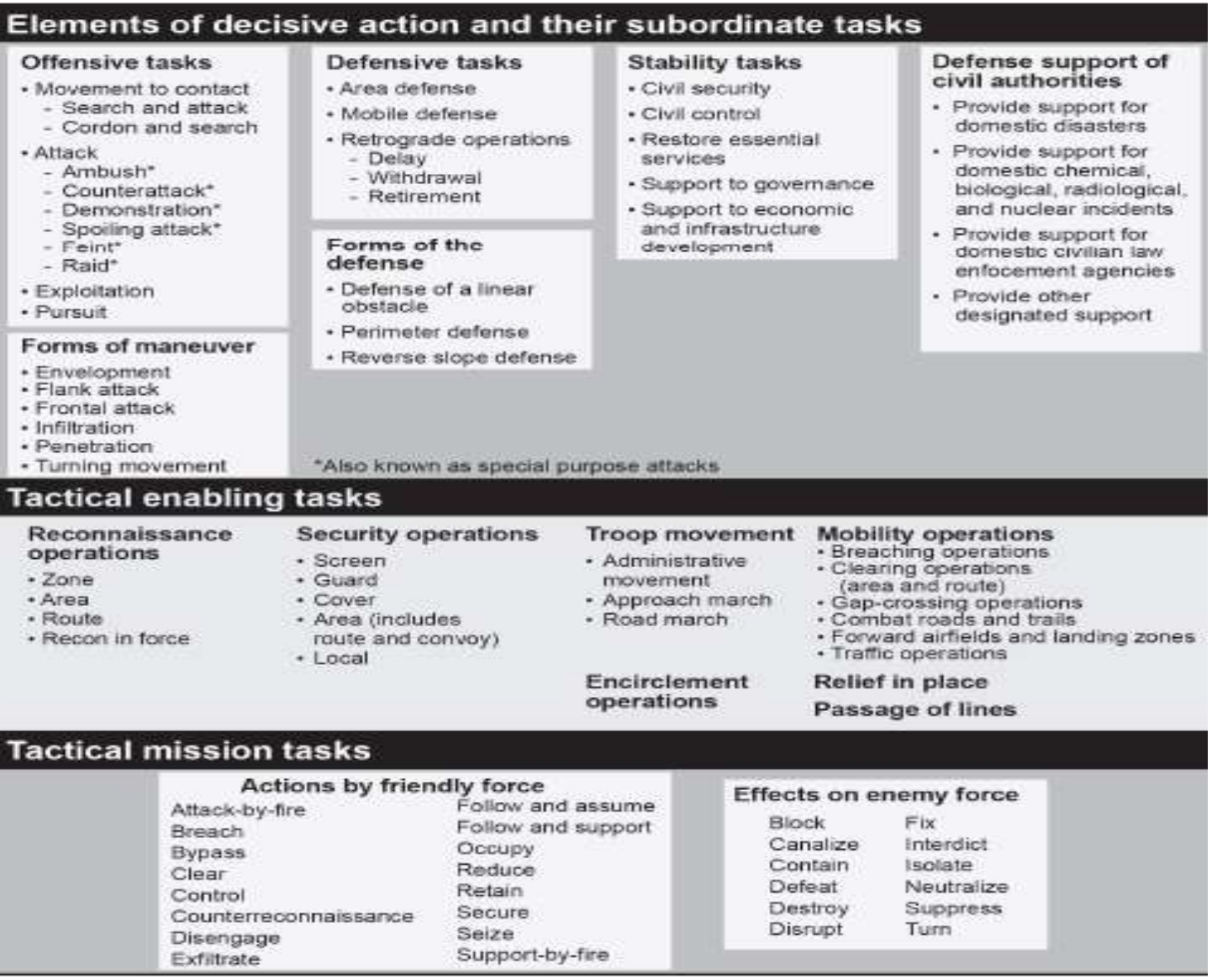
PROPHET

- **Primary Function**: Exploits signals internals for intelligence and immediate combat information in support of stability operations. Provides near real time (NRT) protection of force, situational awareness, and actionable intelligence to maneuver elements. Organic communications jamming. Supports high-value target/high-value individual (HVT/HVI) targeting.
  Range of Transport: See up-armored M1165A1 HMMWV
  Endurance of Transport: See up-armored M1165A1 HMMWV
  Inventory: Classified
- Prophet is the Army's dedicated, ground based SIGINT and electronic attack (EA) system.
- Prophet system comprises two or more sensors (depending on echelon and mission) and Prophet control (PC), a command and control (C2) system containing the resources and activities required to plan, execute, and control Prophet's operational functions.
- Prophet has access to the Global SIGINT Enterprise (GSE).
- Prophet system typically transported in a environmentally controlled, three seat, fully up-armored M1165A1 HMMWV.
- Prophet equipped with enhanced, ground-based, man-pack, dismounted capability to detect, identify, locate, and exploit enemy communications while at halt.
- Dedicated, all weather, 24/7 tactical COMINT and EW system integral to the expeditionary Army SIGINT.
- High –speed wideband data communications provide NSAnet/GSE access at the point of collect that enables processing, collaboration, and dissemination of intelligence.

HUMINT

- **Primary Function**: Collect and disseminate human intelligence (HUMINT) for future intelligence exploitation. HCTs provide can provide pre-brief and debrief support for maneuver units. HCTs are deployed at BCT and lower levels which improves quality of intelligence collection operations.
- HCTs conduct interrogations for intelligence information
- HCTs placement with forward maneuver units provide immediate interrogation support while the information is fresh and the detainee may still be susceptible to approaches, due to the shock of capture.
- Automated tools and improved communications now permit rapid transmittal of information from forward-deployed HCTs.
- HCTs can conduct detainee interrogation at detention facilities.
- HCTs manage source operations through established relationships and contacts which can provide time sensitive intelligence to forward units.

Movement and Maneuver



Basic Tactical Concepts

- Area of operations
- Combined arms
- Concept of operations
- Decisive engagement
- Defeat in detail
- Flanks
- Maneuver
- Operation
- Operational frameworks
- Piecemeal commitment
- Reconstitution
- Reserve
- Rules of engagement
- Tactical mobility
- Uncommitted forces

Operational Design:

Frame the Problem: End state/Condition/Center of Gravity Formulate Design: Operational Approach/Decisive Points/Lines of Effort Refine design: Operation Reach/Tempo/Simultaneity&Depth/Phasing&Transitions/Culmination/Risk

Problem Frame: A problem frame reflects a comprehensive understanding of the situation within which subordinate organizations will operate; provides a basis to visualize campaign design and begin operations to uncover the true nature of the problem(s) to address; involves determining the theme, operational approach, dtermining defeat/stability mechanisms, viewing the OE from a systems-level perspective, and identifying & analyzing COGs; clarifies end state and conditions.

Problem Statement: Approximately 130-word synthesis of critical facts and relationships from mission analysis consisting of two components: (1) conditions that must be established and/or prevented. Sentences that address structure of forces involved; time-distance; defeat/stability mechanisms; and time-based relationships (before/after/etc) from the perspectives of higher intent and directed/derived task and purpose. (2) critical planning factors that will affect development, analysis and coice of a COA & decision making.

Forms of maneuver	Types of Attack	Types of Security	Types of Reconnaissance	Defeat Mechanisms	Stability Mechanisms	Concept of Operations
Envelopment	Deliberate (Offensive)	Area	Area	Destroy	Control	Decisive Operation (only one!)
Turning movement	Hasty (Offensive)	Local	Zone	Disintegrate	Compel	Shaping Operations (multiple)
Penetration	Ambush (Offensive)	Screen	Route	Dislocate	Influence	Main effort (can change by phase)
Infiltration	Raid (Offensive)	Cover	Recon in Force	Isolate	Support	Sustaining
Frontal attack	Feint (Either)	Guard				
	Demonstration (Either)					
	Spoiling (Defensive)					
	Counterattack (Defensive)					

Offensive Operations		Lethal Task (Action)	Lethal Task (Effect)	Purposes (In Order To)
Primary Tasks:	Purposes:	Attack-by-fire	Block	Allow
Movement to contact	Destroy, dislocate, isolate, and disrupt enemy forces	Breach	Canalize	Cause
Attack	Seize key (decisive) terrain	Bypass	Contain	Create
Exploitation	Deprive the enemy of resources	Clear	Defeat	Deceive
Pursuit	Develop intelligence	Consolidate & Reorganize	Destroy	Deny
	Deceive and divert the enemy	Conduct __ reconnaissance	Disrupt	Divert
	Create a secure environment for stability operations	Control	Fix	Enable
		Cover	Interdict	Envelop
		Disengage	Isolate	Find (Locate)
		Follow & Assume	Neutralize	Identify
		Follow & Support	Penetrate	Influence
Defensive Operations		Guard	Turn	Observe
Primary Tasks:	Purposes:	Link up	Counter reconnaissance	Open
Mobile defense	Deter or defeat enemy offensive operations	Occupy		Preserve
Area defense	Gain time	Reduce		Prevent
Retrograde	Achieve economy of force			
	Retain key (decisive) terrain	Retain		Protect
	Protect the populace, critical assets, and infrastructure	Screen		Provide Early Warning
	Develop intelligence	Secure		Support
		Seize		Surprise
		Support-by-fire		

Stability Operations		Non-Lethal Task (Action)	Non-Lethal Task (Effect)	Purposes (In Order To)
Primary Tasks:	Purposes:	Advise	Compel	Allow
Civil security	Provide a secure environment	Assist	Control	Cause
Civil control	Secure land areas	Assess (Collect)	Co-opt	Create
Restore essential services	Meet the critical needs of the populace	Build	Deceive	Deceive
Support to governance	Gain support for host-nation government	Consequence Management	Delay	Deny
Support to economic and infrastructure development	Shape the OE for interagency and host-nation success	Coordinate	Disorganize	Enable
		Equip	Influence	Influence
Civil Support Operations (Domestic)		Synchronize	Inform	Isolate
Primary tasks:	Purposes:		Limit	Open
Provide support in response to disaster or terrorist attack	Save lives		Organize	Preserve
	Restore essential services		Support	Prevent
Support civil law enforcement	Maintain or restore law and order		Train	Protect
Provide other support as required	Protect infrastructure and property			Reduce
	Maintain or restore local government			Retain
	Shape the environment for interagency success			Support

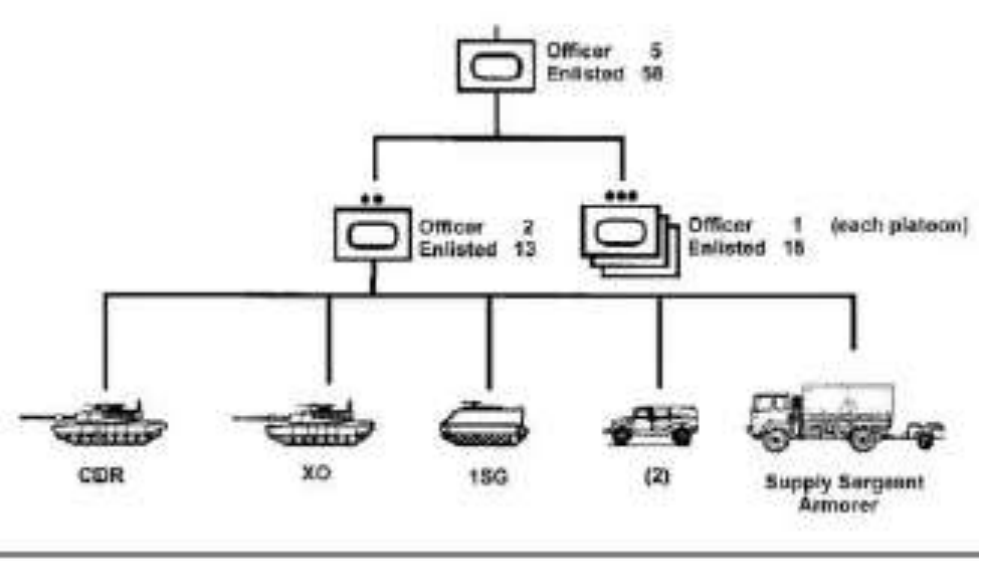


Figure 2-1. Tank Company Organization

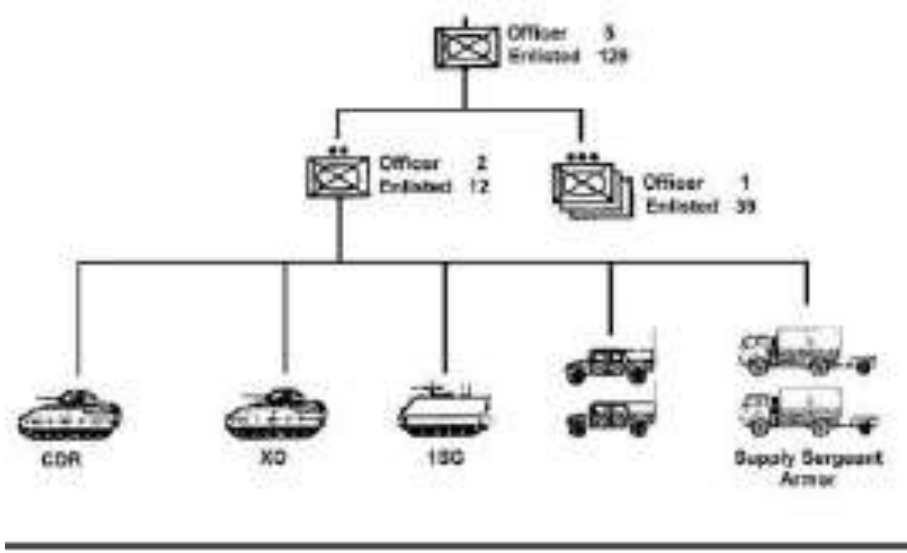


Figure 2-2. Mechanized Infantry Company Organization

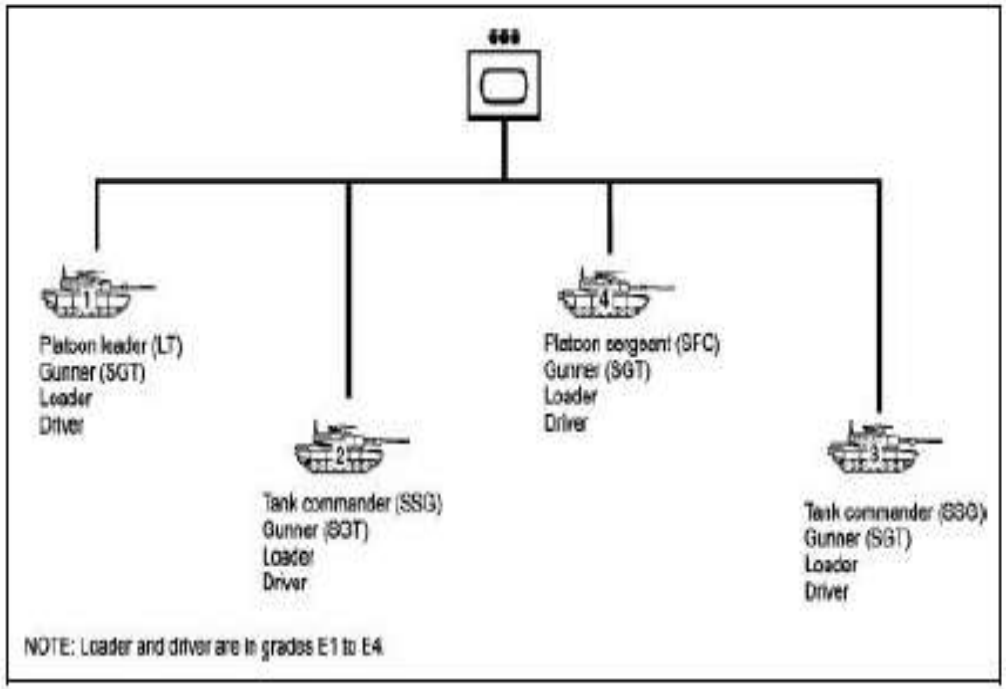


Figure 2-3. Tank Platoon Organization

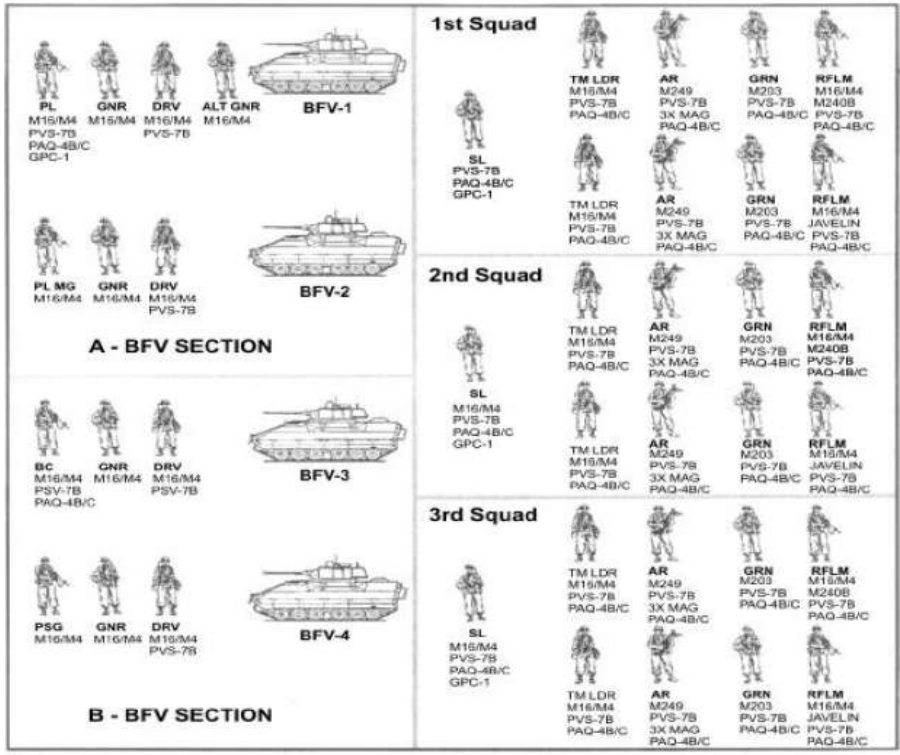


Figure 2-4. Mechanized Infantry Platoon Organization

M1 CAPABILITIES

	Crew	Weapons	Weapons Range	Crusing Range	Fuel Capacity	Max Speed
M1	4	120mm Smoothbore Cannon	3000 m (42 rounds)	265 miles	504 gallons	42 mph
		7.62mm Coax Machine Gun	900 m (5600 rounds)			
		7.62mm Loader's Machine Gun	900 m			
		.50Cal TC's Machine Gun	1830 m (900 rounds)			

- Estimated Armor Protection Levels in mm of Rolled Homogenous Armor Equivalent
  - Turret: 800-900 (KE); 1320-1620 (CE)
  - Glacis: 560-590 (KE); 510-1050 (CE)
  - Lower Front Hull: 580-650 (KE); 800-970 (CE)

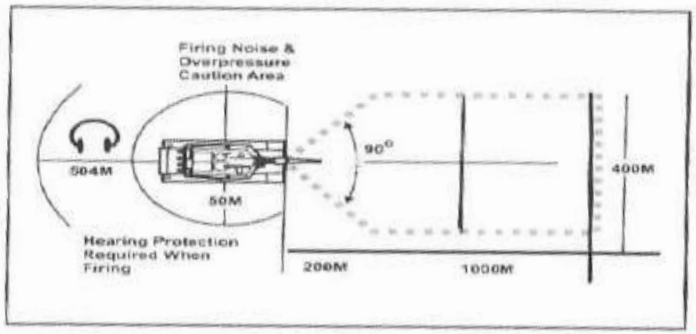


Figure 7-2. 120 mm Sabot Petal Danger Area and Noise/Overpressure Caution Area

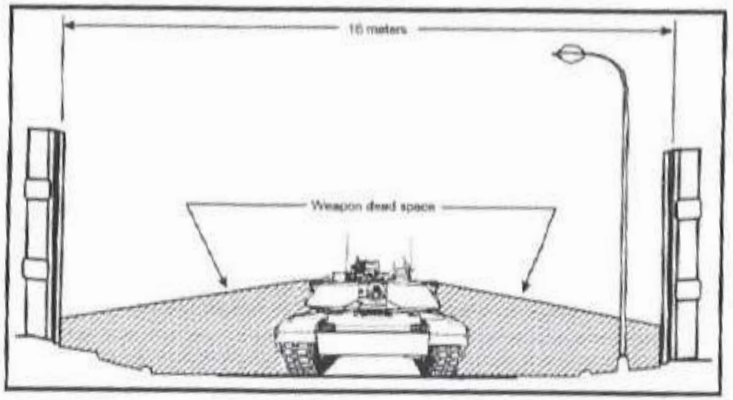


Figure 7-3. Tank Weapon Dead Space at Street Level

M2 CAPABILITIES

	Crew	Weapons	Weapons Range	Crusing Range	Fuel Capacity	Max Speed
M2	3 + 7 Dismounts	25mm Bushmaster	3000 m (900 rounds)	300 miles	175 gallons	45 mph
		7.62mm Coax Machine Gun	900 m (2200 rounds)			
		5.56mm Firing Port Weapons	800 m			
		TOW Missile Launcher	3750 m (7 missiles)			

- Estimated Armor Protection Levels in mm of Rolled Homogenous Armor Equivalent
  - Turret: 100-110 (KE); 1320-1620 (CE)
  - Glacis: 126 (KE); 150 (CE)
- Add-on reactive armor

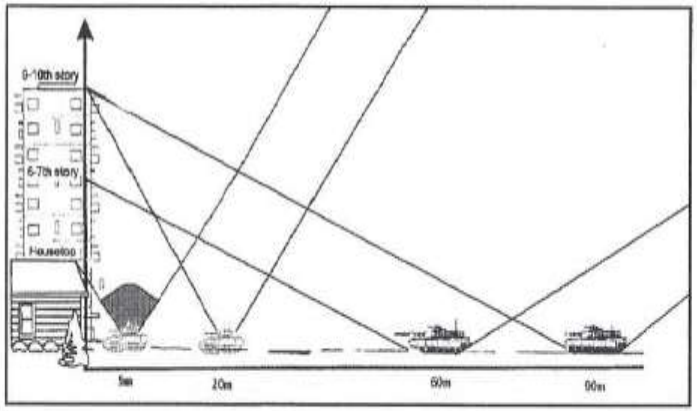


Figure 7-4. Bradley and Tank Main Gun and Coax Deadspace above Street Level

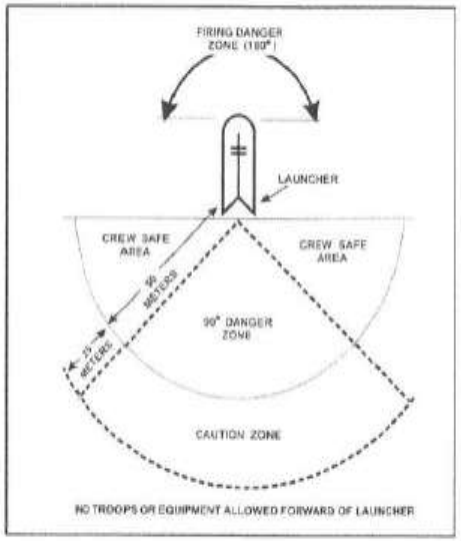


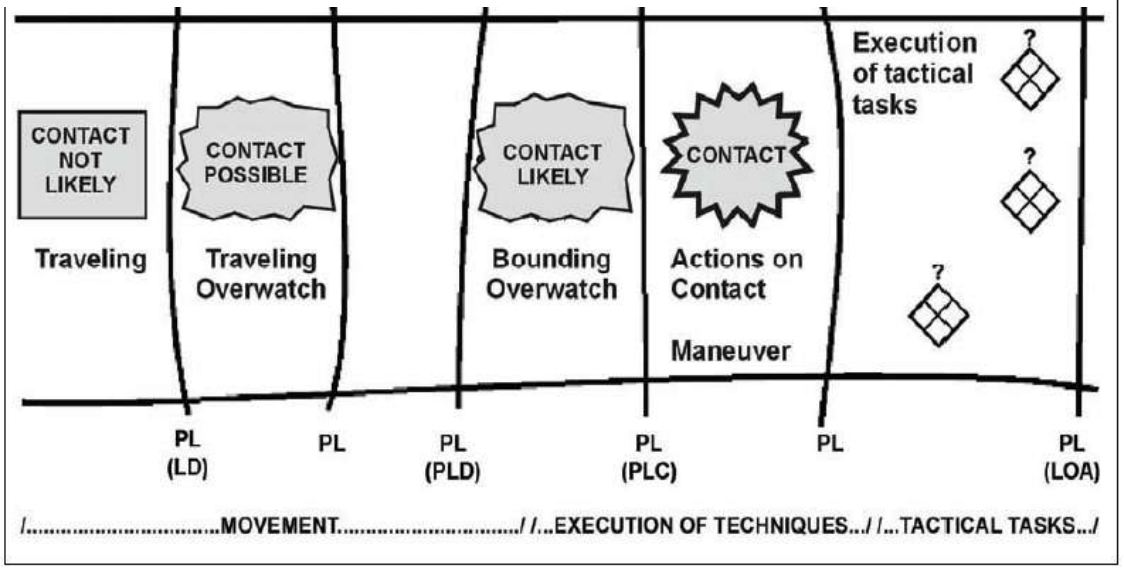
Figure 7-5. TOW Backblast Caution/Danger Area

STRYKER CAPABILITIES

	Crew	Weapons	Weapons Range	Crusing Range	Fuel Capacity	Max Speed
Stryker	3 + 9 Dismounts (Maximum)	M2 .50Cal	2200 or 1830m (Depending on RWS) (2000 rounds)	300 miles	52 gallons	60+ mph
		Mk-19 Grenade Launcher	2212 m (320 rounds)			
		7.62mm M240 Machine Gun	900 m			

- Armament dependent on variant type (.50Cal vs. Mk-19 vs. 7.62mm)
- Stryker Family of Vehicles includes ten different variants: CV, ICV, RV, MEV, ESV, ATGM, MGS, NBCRV, FSV, and Mortar Carrier
- Estimated Armor Protection Levels in mm of Rolled Homogenous Armor Equivalent
  - 14.5 mm all around vehicle
  - 152mm airburst protection

Movement Techniques



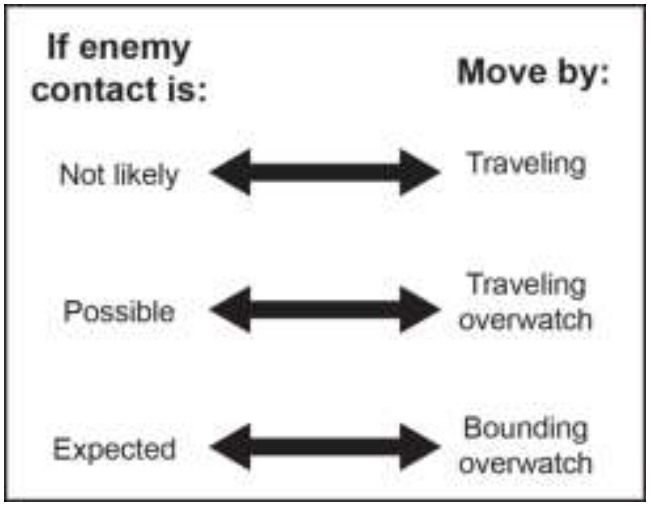


Figure 3-3. Traveling technique.

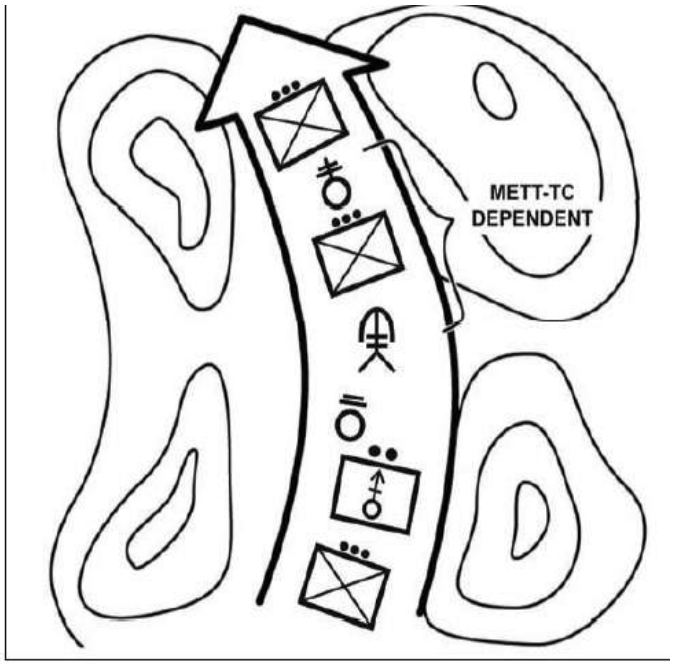


Figure 3-4. Traveling overwatch technique.

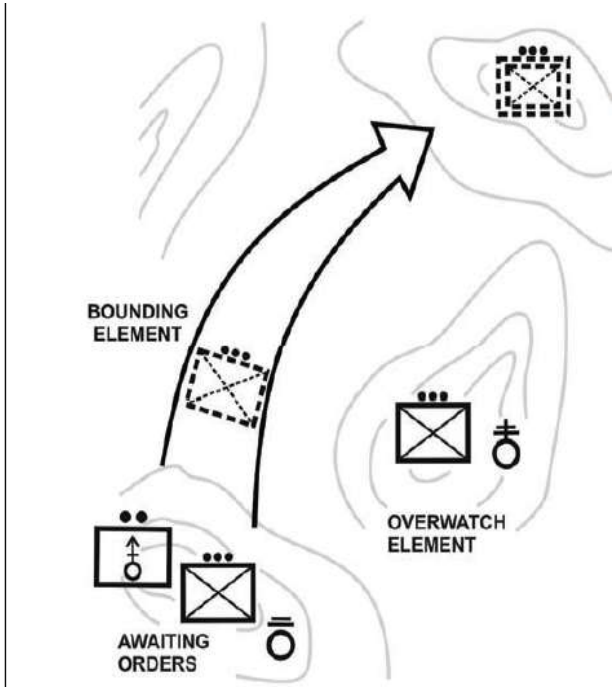


Figure 3-5. Bounding overwatch technique.

Movement Formations

Formation	Security	Fires	Control	Speed
Column	Good dispersion. Good all-round security.	Good to front and rear. Excellent to the flanks.	Easy to control. Flexible formation.	Fast.
Line	Excellent to the front. Poor to the flank and rear.	Excellent to the front. Poor to the flank and rear.	Difficult to control. Inflexible formation.	Slow.
Wedge	Good all-round security.	Good to the front and flanks.	Less difficult to control than the line. Flexible formation.	Faster than the line.
Vee	Better to the front.	Very good to the front.	Very difficult to control.	Slow.
File	Least secure. Effective use of concealment.	Poor.	Easy to control.	Fast.
Echelon	Good to the echeloned flank and front.	Good to the echeloned flank and front.	Difficult to control.	Slow.

Table 3-1. Comparison of movement formations.

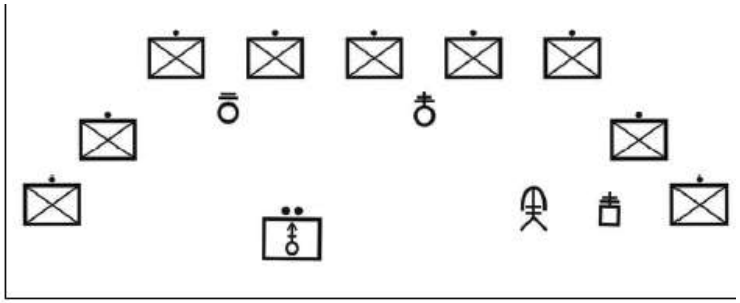


Figure 3-7. Example company line formation.

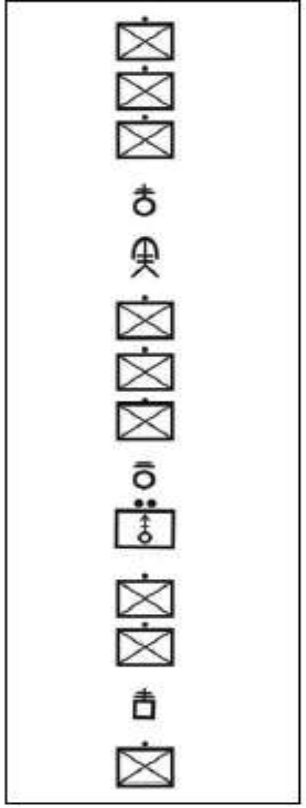


Figure 3-10. Example company file formation

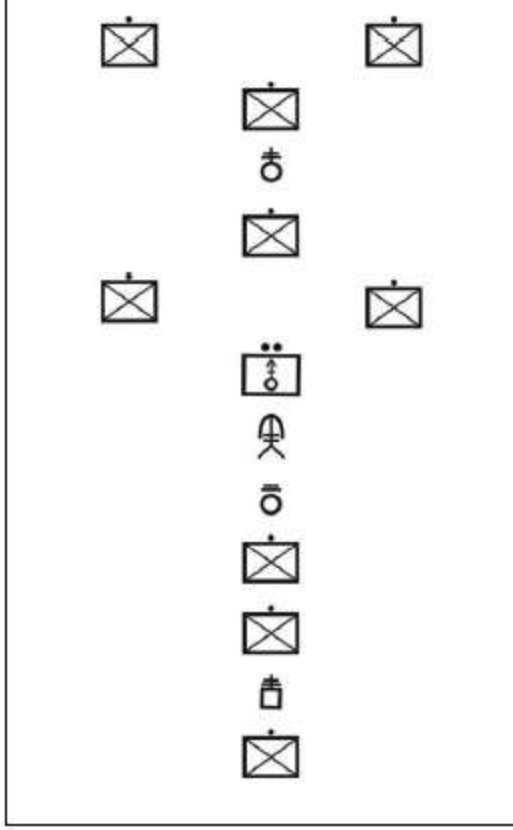


Figure 3-6. Example company column formation.

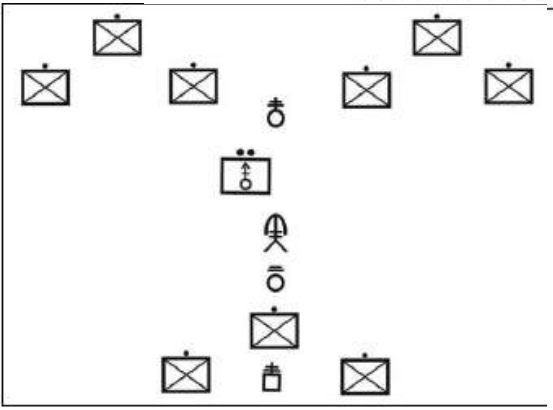


Figure 3-9. Example company vee formation.

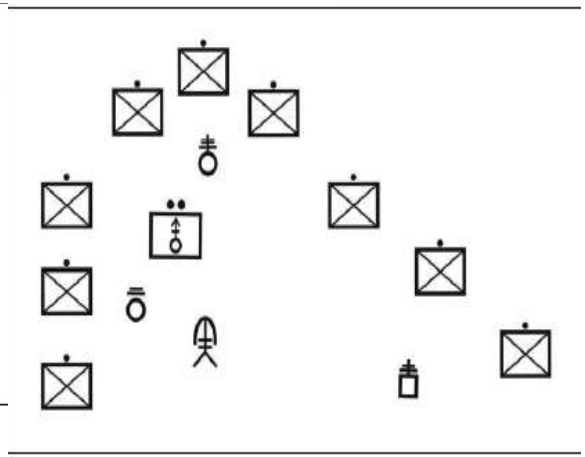


Figure 3-8. Example company wedge formation.

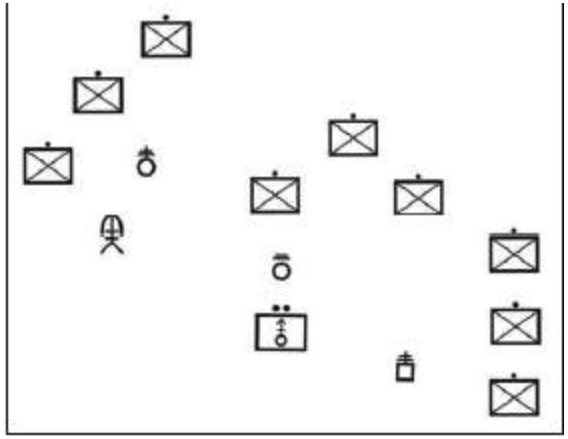


Figure 3-11. Example echelon right formation.

SDZ DEFINITIONS

IMPACT AREA (AREA W): THE PRIMARY DANGER AREA FOR THE IMPACT OF ALL ROUNDS.

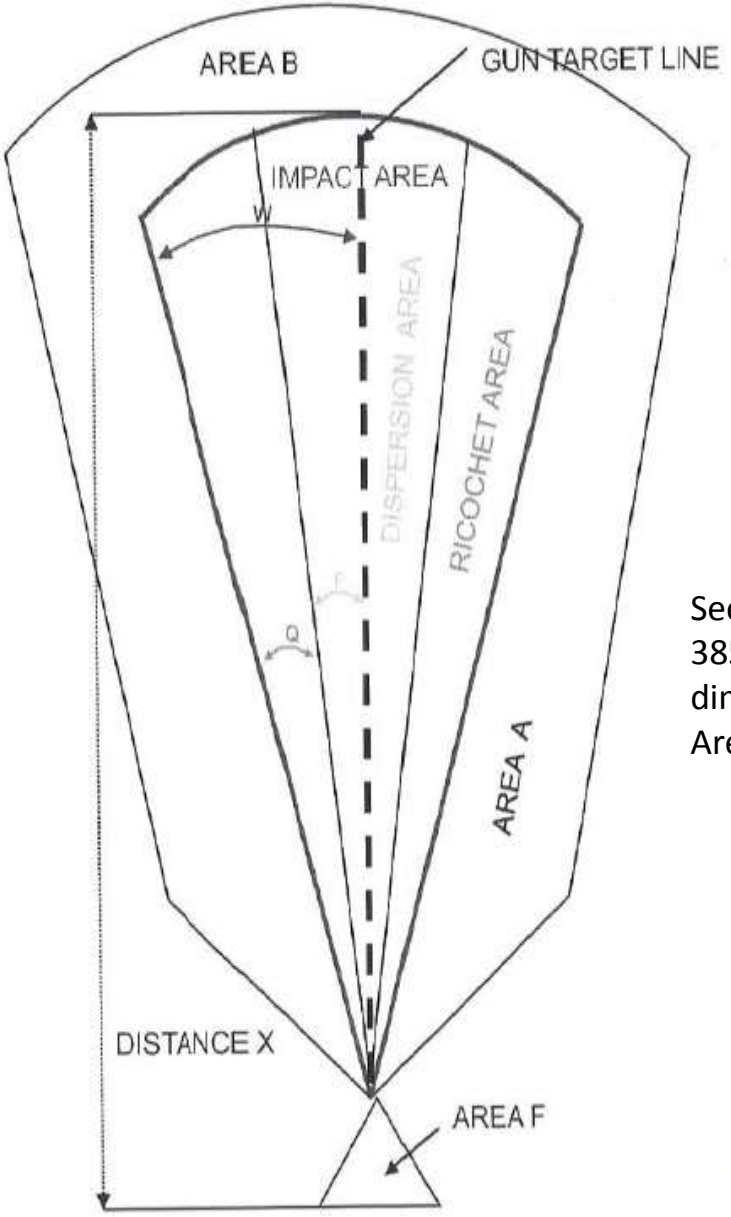
DISPERSION AREA DISTRIBUTION OF A SERIES OF ROUNDS FROM ONE WEAPON AIMED AT ONE POINT OF IMPACT.

ANGLE P: DISPERSION AREA EXPRESSED IN DEGREES

RICOCHET AREA: THE AREA PROVIDED TO CONTAIN RICOCHET PROJECTILES.

ANGLE Q: RICOCHET AREA EXPRESSED IN DEGREES

AREA A: THE AREA (SECONDARY DZ) WHICH PARALLELS THE IMPACT AREA PROVIDE TO CONTAIN FRAGMENTS OR ITEMS EXPLODING ON THE EDGE OF THE IMPACT AREA.
AREA B: THE AREA (SECONDARY DZ) ON THE DOWNRANGE SIDE OF THE IMPACT AREA DESIGNED TO CONTAIN FRAGMENTS AND EXPLODING ITEMS.
AREA F: THE BACK-BLAST AREA



See DA PAM 385-63 for dimensions of Areas

Principles of Direct Fire Control

- Mass the effects of fire
- Destroy the greatest threat first
- Avoid target overkill
- Employ the best weapon for the target
- Minimize friendly exposure
- Prevent fratricide
- Plan for extreme limited visibility conditions
- Develop contingencies for diminished capabilities

Fire Control Process

- Identify probable enemy locations and determine the enemy scheme of maneuver
- Determine where and how to mass (focus and distribute) fire effects
- Orient forces to speed target acquisition
- Shift fires to refocus or redistribute their effects

Terrain-based Fire Control Measures

- Target reference point (TRP)
- Engagement area
- Sector of fire
- Direction of fire
- Terrain-based quadrant
- Friendly-based quadrant
- Maximum engagement line (MEL)
- Restrictive fire line (RFL)
- Final protective line (FPL)

Threat-based Fire Control Measures

- Fire patterns
- Target array
- Engagement priorities
- Weapons ready posture
- Trigger
- Weapons control status
- Rules of engagement (ROE)
- Weapons safety posture
- Engagement techniques

Engagement Techniques

- Point fire
- Area fire
- Volley fire
- Alternating fire
- Observed fire
- Sequential fire
- Time of suppression
- Reconnaissance by fire

Fire Commands

- Alert
- Weapon or ammunition (optional)
- Target description
- Orientation
- Range (optional)
- Control (optional)
- Execution

Fire Patterns

- Frontal Fire
- Cross Fire
- Depth Fire

Three Levels of Weapon Control Status:

· **WEAPONS HOLD**. Engage only if engaged or ordered to engage.

· **WEAPONS TIGHT.** Engage only targets that are positively identified as enemy.

· **WEAPONS FREE.** Engage any targets that are not positively identified as friendly.

Weapons Safety Posture:

· **AMMUNITION LOADED.**

· **AMMUNITION LOCKED.**

· **AMMUNITION PREPARED.**

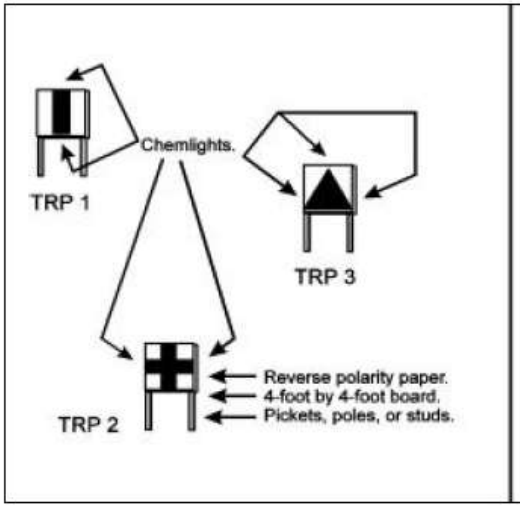
· **WEAPONS CLEARED.**

Fire Control Process:

- Identify probable EN locations and determine EN scheme of MNVR
- Determine where/how to mass (focus/distribute) fire effects
- Orient forces to speed target acquisition
- Shift fires or redistribute their effects

Table B-1. Weapons Safety Posture Levels

ELEMENT SAFETY POSTURE	TANK WEAPONS AND AMMUNITION	BFV WEAPONS AND AMMUNITION	INFANTRY SQUAD WEAPONS AND AMMUNITION
AMMUNITION LOADED	Main gun ammunition loaded. Machine gun ammunition on feed tray; bolt locked to rear. Smoke grenades in launchers. Weapons on electrical safe.	25-mm rounds cycled to bolt. Coax rounds on feed tray; bolt locked to rear. TOW missiles in launchers. Smoke grenades in launchers. Weapons on electrical safe.	Rifle rounds chambered. Machine gun and SAW ammunition on feed tray; bolt locked to rear. Grenade launcher loaded. Weapons on manual safe.
AMMUNITION LOCKED	Main gun ammunition in ready rack. Machine gun ammunition on feed tray; bolt locked forward. Smoke grenades in launchers. Weapons on electrical safe.	25-mm rounds loaded into feeder, but not cycled to bolt. TOW missiles in launchers. Smoke grenades in launchers. Weapons on electrical safe.	Magazines locked into rifles. Machine gun and SAW ammunition on feed tray; bolt locked forward. Grenade launcher unloaded.
AMMUNITION PREPARED	Main gun ready rack filled. Machine gun ammunition boxes filled. Smoke grenades in launchers.	25-mm ready boxes filled. Coax ammunition boxes filled. TOW missiles in launchers. Smoke grenades in launchers.	Magazines, ammunition boxes, launcher grenades, and hand grenades prepared but stowed in pouches/vests.
WEAPONS CLEARED	Main gun ready rack filled. Machine gun cleared, with bolts locked to the rear.	25-mm feeder removed; feeder and chamber cleared. Coax bolt group removed and chamber cleared.	Magazine, ammunition boxes, and launcher grenades removed; weapons cleared.



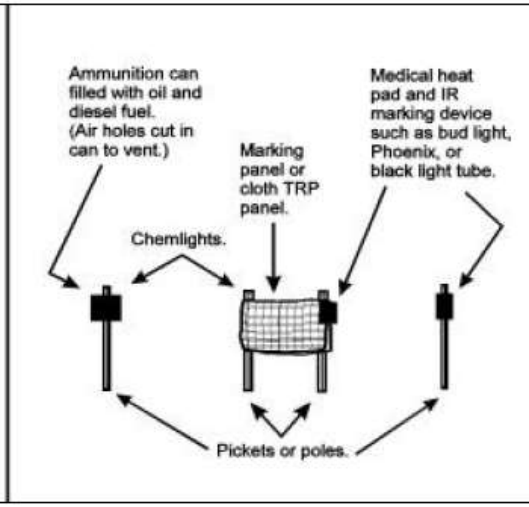


Figure B-2. Examples of Constructed TRP Markers

Readiness Levels

REDCON-1 (full alert):
Unit is ready to move/fight immediately and dismounted security has re-mounted.
Vehicles loaded and secured, and weapons manned.
Vehicle engine running.
For defensive operations, immediate disruption obstacles remain deployed.
FBCB2 on.

REDCON-1.5
Unit prepared to move in 5 minutes
REDCON-1 with vehicle engine off, door and hatches open
Dismounted security is closed in tight perimeter

REDCON-2 (full alert; engines off):
Unit prepared to move in 15 minutes.
Pre-combat checks completed.
Equipment stowed except as needed for local security.
Vehicles and weapons manned.
Local security established.
Status reports submitted to the CP.
Sensitive items (Green 2) report submitted to higher.
Engine off to conserve fuel and limit noise.
Infantry in fighting positions, dismounted OPs remain forward in position.
FBCB2 on.

REDCON-3 (reduced security):
Unit prepared to move in 30 minutes.
Fifty percent of the platoon standing down for mission planning and preparation (feeding, resting, maintenance).
Remaining soldiers providing security, OPs, manning weapons, and monitoring radios.

REDCON-4 (preparation phase/minimum security):
Unit prepared to move in 1 hour.
Seventy-five percent of the platoon standing down for mission planning and preparation.
Remaining soldiers providing security.

REDCON-5. Requires more than 1 hour for unit to execute mission.

Arming and Uniform Levels

WEAPONS ARMING STATUS	MEANING
GREEN	1.Weapon on person with a fully loaded 2. Magazine in your possession
AMBER	1. Weapon and full basic load on person 2. Fully loaded magazine in the weapon 3. No round chambered
RED	1. Weapon and full basic load on person 2. Fully loaded magazine in the weapon 3. Round chambered 4. **Weapon on safe**
UNIFORM POSTURE DEFINITIONS	**MEANING**
U1	**ACU** or official service physical fitness uniform if doing PT or after duty hours. Helmet and Individual Body Armor (IBAS with **ESAPI** plates in) available within 10 minutes
U2	**ACU** or official service physical fitness uniform, helmet, **ballistic eyewear**, and IBAS worn out of doors for a temporary stated time frame or for a specific activity. Personnel may wear the helmet and IBAS (**ESAPI plates required; DAPS, E-SBI per METT-TC**) over the official service physical fitness uniform only when going to, performing, or coming from physical training activity on the FOB.
U3	**ACU** or official service physical fitness uniform, **ballistic eyewear,** helmet and IBAS (**ESAPI plates required; DAPS, E-SBI per METT-TC**) worn out of doors until further notice. Personnel may wear the helmet and individual body armor over the official service physical fitness uniform only when going to, performing, or coming from physical training activity on the FOB.
U4	**ACU**, helmet, IBAS (**ESAPI plates required; DAPS, E-SBI per METT-TC**), ballistic goggles (if available), and combat earplugs are worn. Physical Fitness uniform is not authorized

PLANNING FACTORS FOR TIME AND SPACE (ADJUST FOR METT-T)

A. Attack Timings. Timings for an attack are determined by summing the basic elements of the attack:

1. Movement to the assault position
2. The assault
3. The exploitation (which includes consolidation and reorganization)

B. Movement to the assault position is generally determined as a movement to contact. Rate of dismounted movement to contact (tactical movement)

Open, Rolling Terrain (GO):	Day	2KPH	Night	1KPH
Close Terrain (Slow-GO):	Day	1KPH	Night	.5KPH
Cross Contour (NO-GO):	Day	.5KPH	Night	.2KPH

C. Opposed Rates of advance in the assault in KPH (From PLD to Objective):

Level of Resistance							
Intense	(1:1)	GO	.6	SLOW-GO	.5	NO-GO	.15
Normal	(3:1)	GO	1.2	SLOW-G0	.75	NO-GO	.5
Light	(5:1)	GO	1.5	SLOW-GO	1.1	NO-GO	.6

D. Exploitation Timings:

- Fighting through the prepared positions is planned at 100M in 15 minutes
- Hasty consolidation against an enemy counterattack generally requires 30 minutes for a Battalion and 15 minutes for a Company
- Hasty reorganization after an assault is planned at 45 minutes for a Company and 90 minutes for a Battalion

E. Space planned for a day assault where the Company has room to maneuver with two Platoons forward, each with 2 Squads:

- 10 M interval 400 M
- 5 M interval 200 M
- 2 M interval 80 M

F. Frontage Considerations: Greatly reduced line-of-sight ranges, built-in obstacles, and compartmented terrain may require the commitment of more troops for a given frontage. The team's ability to maintain depth through the sector decreases as the frontage increases

1. Platoon in UO Defense — one to two city blocks (avg block 175M wide)
2. Company UO Attack — one to two city blocks
3. Battalion UO Attack — four to eight city blocks
4. R+S Forces — cover the frontage of unit AoA in an Attack
5. Company Offensive — 50-800meter
6. Battalion Offensive — 1-3 kilometers
7. Company Defensive — 1.5 -3 kilometers
8. Battalion Defensive — 5-8 Kilometers

Table 4-2. Historical minimum planning ratios

Friendly Mission	*Position*	*Friendly : Enemy*
Delay		1:6
Defend	Prepared or fortified	1:3
Defend	Hasty	1:2.5
Attack	Prepared or fortified	3:1
Attack	Hasty	2.5:1
Counterattack	Flank	1:1

Division Opposed Rates of Advance (in km/day)												
Desgree of Resistance Attacker to Defender Ratio	Prepared Defense						Hasty Defense / Delay					
	Unrestricted Terrain		Restricted Terrain		Severely Restricted Terrain		Unrestricted Terrain		Restricted Terrain		Severely Restricted Terrain	
	Arm / Mech	Inf	Arm / Mech	Inf	Arm / Mech	Inf	Arm / Mech	Inf	Arm / Mech	Inf	Arm / Mech	Inf
Intense Resistance 1:1	2	2	1	1	0.6	0.6	4	4	2	2	1.2	1.2
Very Heavy 2:1 (-)	5-6	4	2-3	2	1.5-1.8	1.2	10-12	8	5-6	4	3-3.6	2.4
Heavy 3:1	7-8	5	3-4	2.5	2.1-2.4	1.5	13-16	10	8	5	3.9-4.8	3
Medium 4:1	8-10	6	4-5	3	2.4-3	1.8	16-20	12	10	6	4.8-6	3.6
Light 5:1	16-20	10	8-10	5	4.8-6	3	10-40	18	20	9	9-12	5.4
Negligible 6:1	24-30	12	12-15	6	7.2-9	3.6	48-60	24	30	42	14.4-18	7.2

Brigades and Below Opposed Rates of Advance (in km/day)												
Desgree of Resistance Attacker to Defender Ratio	Prepared Defense						Hasty Defense / Delay					
	Unrestricted Terrain		Restricted Terrain		Severely Restricted Terrain		Unrestricted Terrain		Restricted Terrain		Severely Restricted Terrain	
	Arm / Mech	Inf	Arm / Mech	Inf	Arm / Mech	Inf	Arm / Mech	Inf	Arm / Mech	Inf	Arm / Mech	Inf
Intense Resistance 1:1	.6	.5	.5	.3	.15	.1	1.0	.8	.8	.5	.4	.2
Very Heavy 2:1 (-)	.9	.6	.6	.4	.3	.2	1.5	1.0	1.0	.7	.6	.3
Heavy 3:1	1.2	.7	.75	.5	.5	.3	2.0	1.2	1.3	.9	.8	.5
Medium 4:1	1.4	.8	1.0	.6	.5	.5	2.4	1.4	1.75	1.1	.9	.8
Light 5:1	1.5	.9	1.1	.7	.6	.5	2.6	1.6	2.0	1.2	1.0	.9
Negligible 6:1	1.7+	1.0+	1.3+	.8+	.6+	.6+	3.0+	1.7+	2.3+	1.3+	1.1+	1.0

Unopposed Rates of Movement

Type of Force			
		Foot Infantry	**Armored or mechanized**
Type of Terrain	**Unrestricted**	4 KMPH (day)	24 KMPH (day)
		3.2 KMPH (night)	24 KMPH (night with lights / passive)
	Restricted	2.4 KMPH (day)	16 KMPH (day)
		1.6 KMPH (night)	8 KMPH (night, blacked out)
	Severely Restricted	1.0 KMPH (day)	1.0 KMPH (day)
		.1 to .5 KMPH (night)	.1 to .5 KMPH (night)

Type Road March	Paved Road	Gravel Road	Tank Trail	Go Terrain
Day	65 KMPH	60 KMPH	50 KMPH	40 KMPH
Night (White headlights)	65 KMPH	60 KMPH	50 KMPH	40 KMPH
Night (Red headlights)	60 KMPH	50 KMPH	40 KMPH	35 KMPH

Machinegun Terminology

•Line of Sight: AN IMAGINARY LINE, FROM THE FIRERS EYE, THROUGH THE SIGHTS, TO THE POINT OF AIM ON THE TARGET.

•Burst of Fire: A BURST OF FIRE IS A NUMBER OF SUCCESSIVE ROUNDS FIRED WITH THE SAME ELEVATION AND POINT OF AIM WHEN THE TRIGGER IS HELD TO THE REAR. THE NUMBER OF ROUNDS IN A BURST CAN VARY, DEPENDING ON THE TYPE OF FIRE EMPLOYED.

•Trajectory: TRAJECTORY IS THE CURVED PATH A ROUND TAKES DURING ITS FLIGHT. THE TRAJECTORY OF A ROUND IS AFFECTED BY AIR RESISTANCE AND GRAVITY.

•Maximum Ordinate: MAXIMUM ORDINATE IS THE HIGHEST POINT ABOVE THE LINE OF SIGHT TO WHICH A PROJECTILE RISES DURING ITS FLIGHT. THE MAXIMUM ORDINATE OCCURS APPROXIMATELY 2/3 OF THE WAY ALONG THE TRAJECTORY OF THE PROJECTILE. *Example: AS THE RANGE INCREASES, SO DOES THE HEIGHT OF THE MAXIMUM ORDINATE.*

•Cone of fire: THE GROUP OF TRAJECTORIES RESULTING FROM A BURST OF FIRE IS TERMED THE CONE OF FIRE. WHEN A BURST OF FIRE STRIKES A VERTICAL TARGET, THE ROUNDS WILL FORM A PATTERN, OVAL IN SHAPE, WITH THE DENSITY OF SHOTS DECREASING TOWARDS THE EDGES

•Beaten Zone: THE PATTERN FORMED WHEN THE CONE OF FIRE STRIKES THE GROUND IS TERMED THE BEATEN ZONE. IT IS OVAL OR CIGAR SHAPED AND THE DENSITY OF ROUNDS DECREASES TOWARDS THE EDGES. BECAUSE OF DISPERSION ONLY THAT PART OF THE BEATEN ZONE IN WHICH 85% OF THE ROUNDS FALL IS CONSIDERED THE EFFECTIVE BEATEN ZONE.

•Dangerous Space: DANGEROUS SPACE OCCURS BETWEEN THE MUZZLE OF THE MACHINE GUN AND THE POINT WHERE THE LOWEST ROUND IN THE BEATEN ZONE STRIKES THE GROUND.

•Dangerous Zone: THE DANGEROUS ZONE IS THAT AREA COVERED BY THE DANGEROUS SPACE AND THE BEATEN ZONE. FOR THE FIRE TO BE EFFECTIVE, THE TARGET MUST BE INCLUDED IN THE DANGEROUS ZONE.

•Dead Space

FACTORS EFFECTING THE BURST OF FIRE

- → The Gun & the Ammunition
- → The Firer
- → The Clarity of the Target
- → Air Disturbances & Weather

CLASSES OF MG FIRE

Machineguns produce 2 Classes of Fire with respect to the Ground:

Grazing Fire or Plunging Fire The 2 factors that effect the Class of Fire produced with respect to the Ground are Range and Terrain.

CLASSES OF FIRE RESPECT TO TARGET

FRONTAL FIRE: Occurs when the long axis of the beaten zone is perpendicular to the front of the target.

FLANKING FIRE: Fire that is delivered directly against the flank of the target

OBLIQUE FIRE: When the long axis of the beaten zone is at an angle other than a right angle to the front of the target.

ENFILADE FIRE: When the long axis of the beaten zone coincides or nearly coincides with the long axis of the target. This type of fire is either frontal or flanking. It is the most desirable type of fire with respect to a target because it makes maximum use of the beaten zone.

THE RANGE ON THE BEATEN ZONE

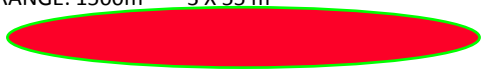
AS RANGE INCREASES……..

M240B

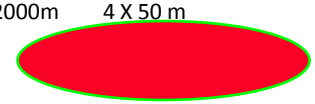
RANGE: 500m 1 X 110 m

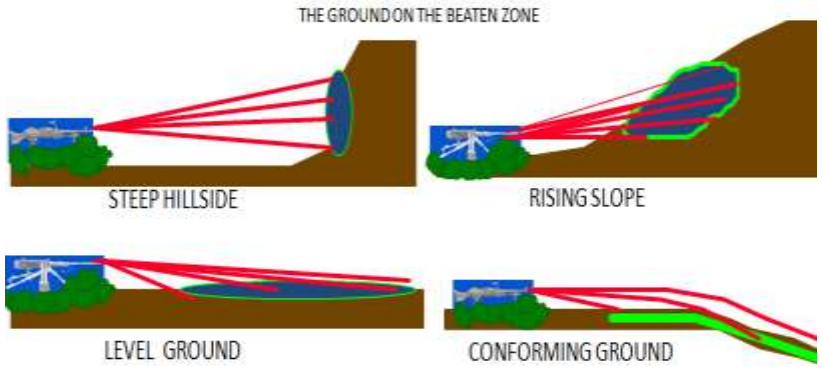
RANGE: 1000m 2 X 75 m

RANGE: 1500m 3 X 55 m



RANGE: 2000m 4 X 50 m





Ground will have a marked effect on the length of the beaten zone. A cone of fire striking a steep hillside will cover a very small area of ground and produce a small beaten zone. The same cone of fire striking a more gentle slope will produce a slightly larger beaten zone. On level ground the beaten zone will be still larger. The largest beaten zone will result where the fall of ground conforms to the trajectory of the round.

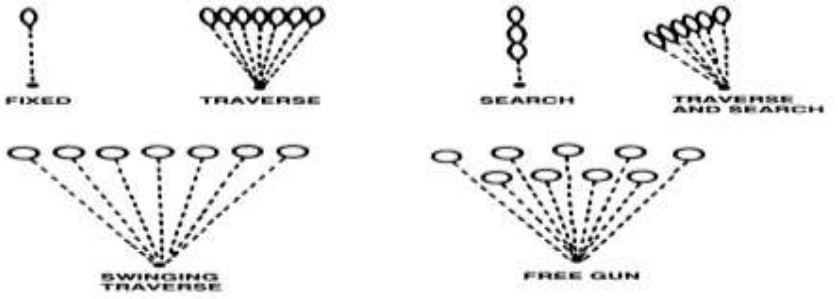


Figure 6-5. Classes of fire with respect to the gun.

Friendly Weapons Ranges

Type Weapon	Planning Range				ORD Considerations for ACA				
60mm	3500m HE	20rpm sustained	2 tubes IBCT company	2 tubes in SBCT company	7000 ft AGL				
	1630m WP								
	951m ILLUM								
81mm	5600m HE	15rpm sustained	4 tubes		10500 ft AGL				
	4800m WP								
	4500m ILLUM								
120mm	7200m HE	4rpm sustained	4 tubes I,S,H MRT PLT	2 tubes in SBCT company	15500 ft AGL				
	7200m WP								
	7400m ILLUM								
105mm	11,500m	3 rpm sustained	16 towed tubes IBCT FA BN		20400 ft AGL				
155mm	14,600m	2 rpm sustained	16 Paladin tubes HBCT FA BN	12 towed tubes in SBCT FA BN	26200 ft AGL				
4.2 IN	6840m HE								
	5650m WP								
	5490m ILLUM								
AN/TPQ-37	30 KM Art/Mor	Max Range: 50KM	Min Range: 3 KM	Emplacement: 30 min	39300 ft AGL				
	50 KM Rocket								
AH-64	4 PER PLT	8 PER CO	24 PER BN	1 BN PER HBCT BDE					
OH-58	5 PER PLT	10 PER TRP	30 PER SQDRN	2 SQDRN PER IBCT BDE					
NOTE: (82nd CAB, 101 AVN BDE, 159 AVN BDE, and 1st CAB in 1ID) **GET 1 X AH64BN AND 1 X OH58 SQDRN**									

Type Weapon	Planning Range	Max Effective	Basic Load Rate	Rates of Fire (rds per min)			Mins the Basic Load Lasts		
				Sustained	Rapid	Cyclic	Sustained	Rapid	Cyclic
M1 TANK									
120MM	2500m	3000m	40						
coax	900m								
50 cal	1600m		900	40	40	500	23	23	2
50 cal CSAM	1600m	50cal mounted to 120 barrel, fired by Tank Gunner through gunner optics							
M2 BFV									
25mm	3000m HE		300		100	200		3	2
	2000m AP								
	2500m APFDST								
COAX	900M		800	100	200	650-950	8	4	1
TOW	2700m (65 min)	3750m	2						
Vehicle POSN plan	2500m								
MGS-SBCT									
105mm	2000m								
coax	900m								
50 cal	1200m								

Type Weapon	Planning Range	Max Effective	Basic Load Rate	Rates of Fire (rds per min)			Mins the Basic Load Lasts		
				Sustained	Rapid	Cyclic	Sustained	Rapid	Cyclic
M4	400m	580m	210	16		800	13		0.25
M249	800m	1000m	800	85	200	800	9	4	1
M240B	1100m AREA (with tripod T+E), 900m tracer burnout		800	100	200	800	8	4	1
M203	350m Area	350 m	24	35	35		1		
	160m Point	160m							
M2 50 CAL	1830m Area	1830m	1000	40	40	500	25	25	2
	1200m Point	1200m							
MK-19	2112m Area	2212m	256	40	60	375	6	4	1
	1500m Point	1500							
M82A1 (SNIPER)	1800m	50CAL							
M24 (SNIPER)	800m	7.62 BOLT							
M21 (SNIPER)	460m	7.62 (M-14)							
JAV	2000m								
AT-4	300m	300m							
XM141(smaw-d)	500m								
M60 / M1	2800m	2800m							
M202 FLASH	750m Area	750m							
	200m Point	200m							
M72A2 LAW	200m Stationary	200m							
	165m Moving	165m							
M47 DRAGON	800m (65 min)	1000m							
M242 25MM	3000m HEIT	3000m							
	1700m	2000m APDS-T							
M9	152.5ft	152.5ft	45	60			1		

FIRES

Anticipated Operational Environment

•US Fires must continue complementary and interdependent forward presence in order to deter regional and cross AOR threats.

•US Fires must decide, detect, deliver, and assess targets early enough with respect to range and altitude to destroy, neutralize, or suppress potential threat and create effects in support of national and strategic objectives.

•Size of theater, non-linear nature of combat, omni-directional nature of threats, and dispersal of critical assets will require US Fires to integrate all forms of Joint and Coalition fires and scalable capabilities within the are of operations

Unified Action
Central Idea: synchronization, coordination, and/or integration of the activities of government and non-government entities with military ops to achieve unity of effort.

Unified Land Operations
Seize, retain, and exploit the initiative to gain and maintain a position of relative advantage in sustained land operations in order to create the conditions for favorable conflict resolution.

Fires Executes Through…

Decisive Action
Offensive, Defensive, and Stability

By means of…

Army Core Competencies

Guided by…

Mission Command

CORE COMPETENCIES
• Air Defense Artillery.
•Field Artillery.

CRITICAL CAPABILITIES
•Target Acquisition.
•Target Discrimination.
•Target Engagement.

PRINCIPLES OF FIRES
•Precision.
•Scalable.
•Synchronized.
•Responsive.
•Networked.

CHARACTERISTICS
•All Weather.
• Precision/Near Precision Fires.
•Mass Area Fires.
•Air and Space Integration.
•Inherently Joint.

1. Fires in support of Unified Land Operations

Roles
•Field Artillery
•Air Defense Artillery

Core Competencies
•Fires in Support of Offense, Defense, and Stability Tasks

Critical Capabilities
•Target Acquisition
•Target Description
•Target Engagement

2. Foundational Fires Principles

Characteristics
•All Weather
•Precision/Near Precision Fires
•Area Fires
•Inherently Joint
•Air and Space Integration

Principles
•Precision
•Scalable
•Networked
•Responsive
•Synchronized

3. Fires Execution

Fires Tasks
•Deliver Fires
•Integrate all Forms of Army, Joint, and Multi-national Fires
•Conduct Targeting

Capabilities
•Army Integrated Fires
•Air and Missile Defense
•Early Warning and Sensors
•Joint Fires Including Electronic Attack

Integrate and synchronize weapon system and sensors in order to achieve lethal and nonlethal effects in support of unified land operations and maneuver commander's requirement and objectives

9 STEPS TO ECHELON FIRES

- Identify fire support available (assets/ ammunition)
- Determine Risk Estimate Distances (RED)
- Plan Targets
- Determine own forces rate of movement
- Develop Schedule of Fires (method)
- Decide how fires will be initiated
- Brief Plan*
- Complete Scheduling Worksheets*
- Rehearse and refine plan

* at CO level internally completed

CTC Newsletter 97-20

Six Requirements for a Target

1. Purpose (intent of fires)
2. Location (bottom up refinement)
3. Observer/Alternate observer
4. Trigger on/off
5. Communications net to call for fires
6. Rehearsal/Restrictions/Resource

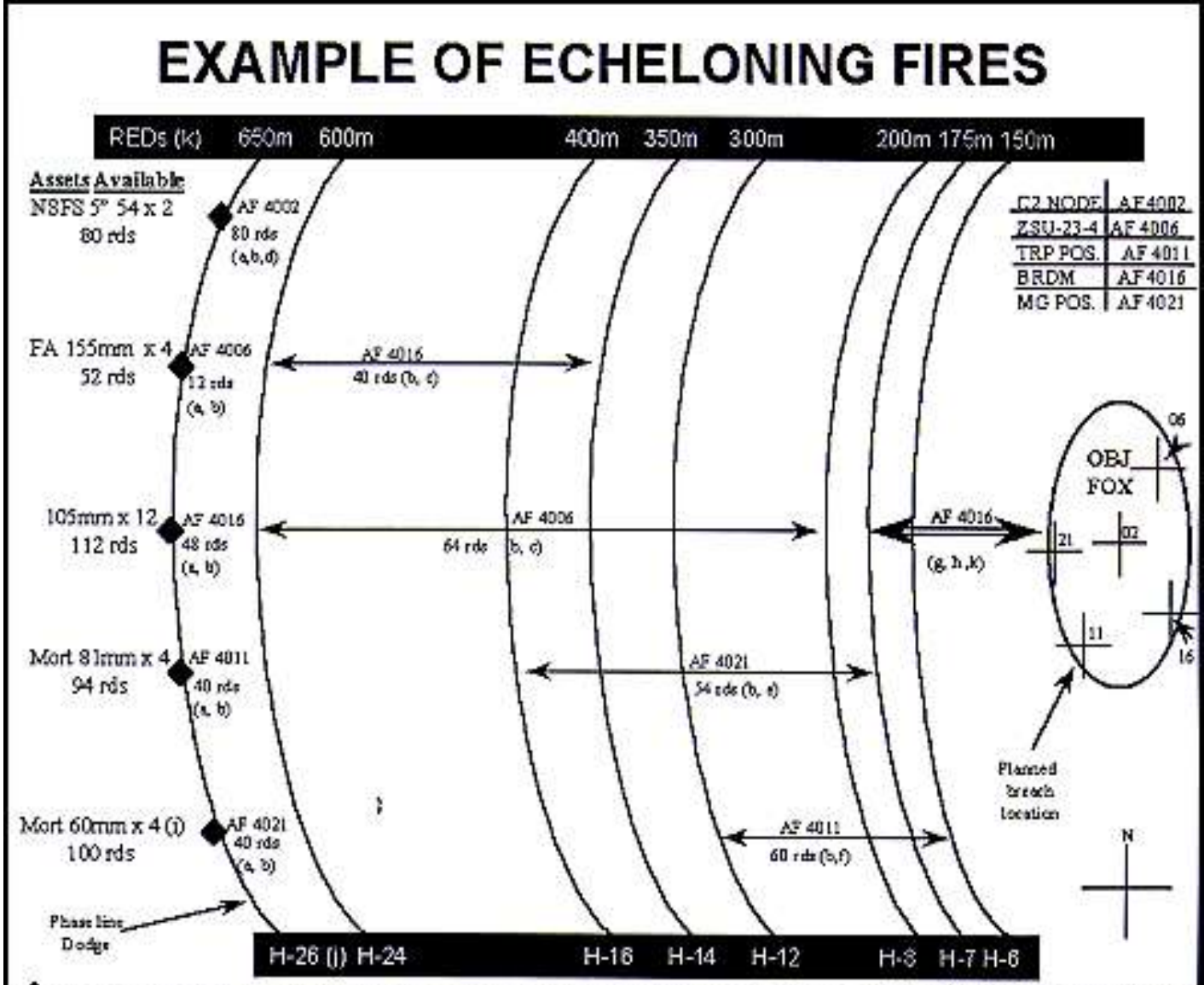


figure 4

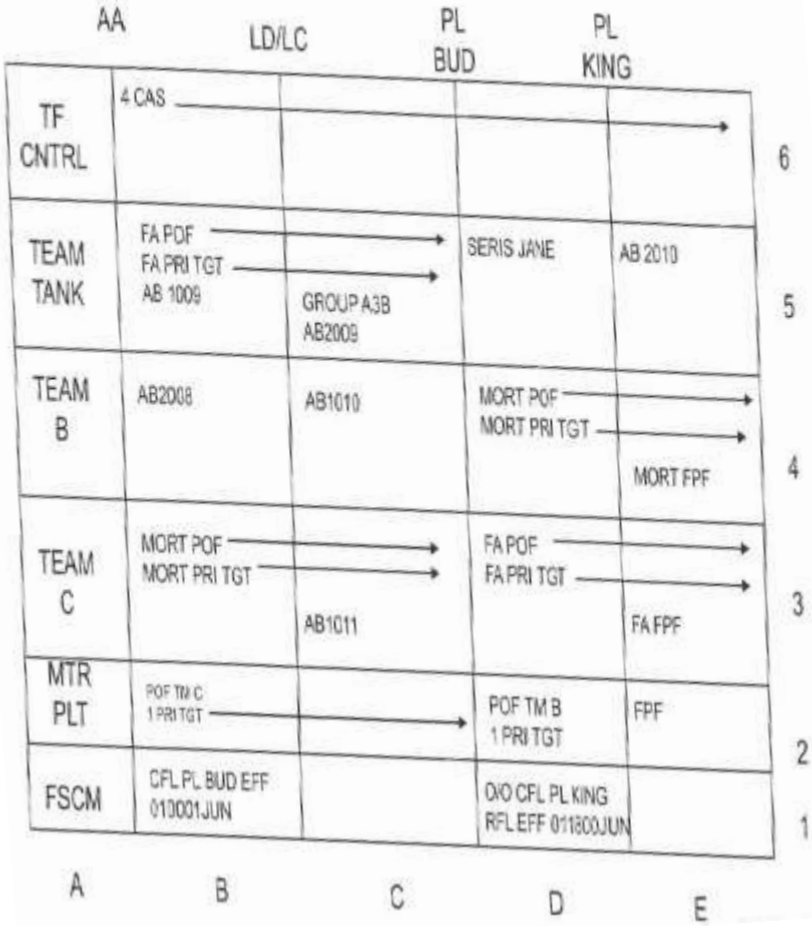
TIME REQUIRED TO DELIVER THE MASSED FIRES				
SYSTEM	# OF GUNS/ TUBES	NUMBER OF ROUNDS FIRED	MAXIMUM[1] RATE OF FIRE	TIME REQ'D TO FIRE
5"/54	2	80	20[2]	2 minutes
155mm	4	12	4	45 seconds
105mm	12	48	10	24 seconds
81mm	4	40	35	17 seconds
60mm	4	40	30	20 seconds

1. Reference FM 6-20-20.
2. Number of rounds per gun or tube per minute.

PLANNING UNIT BASIC LOADS

AMMUNITION	MLRS	155mm BN	105mm BN	120mm PLT	81mm PLT	60mm PLT
HE		460	2304	704	336	456
HE RAP		1188	612			
DPICM		2396				
APICM			1152			
CPHD		198				
ILLUM		90	200	100	48	104
SMK		126	180			
WP				200	96	140
MLRS DPICM	684 (114 PODS)					
ADAM-L		18				
ADAM-S		126				
RAAM-S		306				
RAAM-L		54				
BASEBLEED		414				
Total	684 (114 PODS)	5376	4448	1004	480	700

FIRE SUPPORT EXECUTION MATRIX (SAMPLE)



DANGER CLOSE DATA

Danger Close = Risk-Estimate Distances for 0.1% Probability of Incapacitation (PI) listed in FM 3-9.32.

Airframe / Weapon	Firing Range	0.1% PI (meters/feet)	10% PI (meters/feet)
0.50 cal[1]	300m	20m / 66'	15m / 49'
	500m	35m / 115'	25m / 82'
Cobra / 20 mm (M56)	300m	75m / 246'	30m / 98'
	800m	85m / 279'	50m / 164'
Apache / 30 mm (M789)	500m	70m / 230'	25m / 82'
	1000m	75m / 246'	30m / 98'
2.75" Rockets			
	300m	140m / 459'	60m / 197'
	800m	160m / 525'	80m / 263'
	1000m	180m / 591'	90m / 295'
	2000m[2]	300m / 984'	155m / 509'
	3000m[2]	405m / 1329'	210m / 689'
M-229	300m	145m / 476'	70m / 230'
	800m	165m / 542'	90m / 296'
	1000m	185m / 607'	100m / 328'
	2000m[2]	305m / 1001'	165m / 542'
	3000m[2]	410m / 1346'	220m / 722'
Hellfire Variants[3]			
AGM-114 K2A	All Ranges	110m / 361'	50m / 164'
AGM-114 M		125m / 410'	40m / 131'
AGM-114 N		120m / 394'	40m / 131'

Risk Estimate Distances (REDs)

Item/System	Description	1/10 PI			1/1,000 PI		
		1/3 RNG	2/3 RNG	MAX RNG	1/3 RNG	2/3 RNG	MAX RNG
M224	60mm Mortar	60	65	65	100	150	175
M29/M252	81mm Mortar	75	80	80	165	185	230
M120	120mm Mortar	100	100	100	150	300	400
M102/M119	105mm HE	85	85	90	175	200	275
M109/M198	155mm HE	100	100	125	200	280	450
M109/M198	155mm DPICM	210	225	250	450	450	600
NSFS MK-45	5"/54 gun	210	225	250	450	450	600
2.75" FFAR	Rockets	160	160	160	200	200	200

RADAR ZONES

Critical Friendly Zones (CFZs)- An area, usually a friendly unit or location, that the maneuver commander designates as critical. It is used to protect an asset whose loss would seriously jeopardize the mission. When the computer predicts that an enemy round will impact in a CFZ, the computer will report the location of the weapon that fired the round in precedence ahead of any other detection. Any location of a weapon firing into a CFZ will result in an immediate call for fire unless it is manually overridden by the radar operator. The CFZ provides for the most responsive submission of targets to the fire support system. The CFZ is the only zone that does not have to be in the search fan of the radar. Some examples where the commander may use CFZs are: battle positions (BPs), passage points, breach points, air-assault/airborne LZs and PZs, forward scout positions, support by fire positions, attack by fire positions, choke points along maneuver routes, and aviation forward arming and refueling point (FARPs).

Call for Fire Zones (CFFZs)- A CFFZ designates a search area forward of the FLOT that the maneuver commander wants suppressed, neutralized, or destroyed. An area designated as a CFFZ would likely be on enemy fire support positions and is closely tied to information developed during the IPB process and the HPTL. A CFFZ provides the second most responsive priority of request for fire generated by the radar. A target identified in a CFFZ will generate an FM;CFF Priority 2 message. However, the commander may upgrade this to a Priority 1 message for certain CFFZs. Some examples where a CFFZ may be used are: enemy mortar, artillery groups, and missile positions.

Artillery Target Intelligence Zones (ATIZs)- An area in enemy territory that the maneuver commander wishes to monitor closely. Any weapons acquired in this zone will be reported to the IFSAS/AFATDS computer ahead of any other target detection except CFZ and CFFZ, but the detection will only result in a target report. Examples where an ATIZ could be used are the same as for a CFFZ.

Censor Zones (CZs)- An area from which the commander wishes to ignore any target detection. CZs must be used very judiciously, since the computer does not report to the operator a round originating from a CZ. A CZ may be used to ignore a friendly artillery position that, because of its aspect angle to the radar, could be detected as enemy artillery. This situation could occur when an uneven FLOT exists or when friendly units are in enemy territory. A CZ may also be used when artillery fires in support of rear operations.

Radar Zone Rules 1. Any nine zones may be entered into the radar. 2. Define zones using 3 - 6 grids. 3. Zones can not touch or intersect each other. 4. No more then two zones can lie along the same search Azimuth. 5. All zones except CFZs must fall inside radar search sector

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
201800AUG95

NO FIRE AREA:
DIV OR HIGHER. AREA INTO WHICH NO FIRES OR THEIR EFFECTS MAY BE DELIVERED W/O COORDINATION W/ ESTABLISHING HQs
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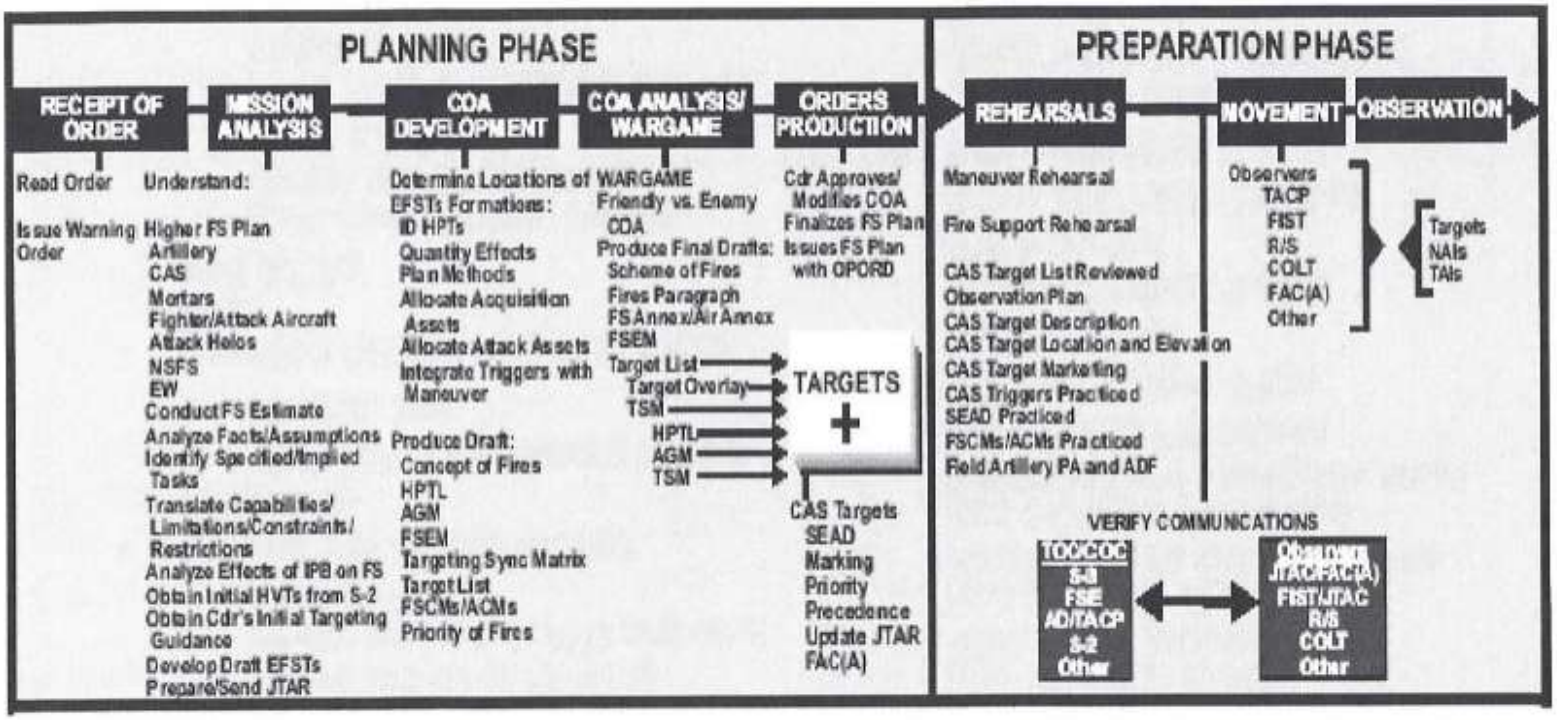
JOINT CLOSE AIR SUPPORT INTEGRATION MODEL



- Five step process imbedded within Army MDMP and MCPP
- Involves all CAS planners not just the TACP

Close Air Support Planning Smart Card

For Battle-staff planning of CAS Missions

1. Receipt of Mission

Commander's initial guidance

Air Order of Battle (apportionment, allocation, and distribution decision)

Air CombatCapability Estimate

Personnel and Equipment Capabilities and Limitations

2. Mission Analysis

Determine Specified, Implied, and Mission Essential tasks

Consider mission, enemy, terrain, and weather, troops and time, civilian (METT-TC)

Anticipate required Air Power based on Battle Staff Estimates

i. Commander's intent / Scheme of Maneuver

ii. Concept of Fires / Essential Fire Support Tasks

iii. Enemy order of Battle

iv. Reconnaissance and Surveliance Plan

v. Observation Plan / Eyes-on Plan / JTAC Placement

vi. Comm Plan Aircraft >TACP > JTAC > Command Net > Fire Direction Net

Complete a CAS Risk Assessment

Determine Type of Terminal Attack Control (Type 1, 2, 3)

3. COA Development

Commander's Intent for CAS

Analyze Aircraft Capabilitiy vs. Eemy Targets and ADA Threats

Prepare a CAS Plan, a Backup Plan, and a Backup to the Backup Plan

Determine best placement/usage of the JTAC/TACP

Prepare Eas, TAIs, NAIs, CAS Triggers, and Movement Plans

Prepare Battle Graphics to include CAS/FSCM/Maneuver/EW/ISR

4. COA Analysis

Name a Specific Desired Effect Compatable with with the Commander's intent

Disposition of: Target, Threat, Friendlies

Consider CAS Aircraft, Weapons, Tactics, Procedures, and ROE

JTAC Tactics, Procedures, Capabilities; Finalize Type (1,2,3) Control

Consider other Airborne Assets: Rotary (JAAT), FAC(A), Jstars, AWACs

Work out FSCMs (Altitudes, Routs SEAD, Marking Rnds, ACAs, C2)

List Critical Events and Decision Points

Wargame the plan (practice, practice, practice)

5. Orders Production

OPORD Fire Support Annex D, paragraph 3 (Close Air Support)

DD fm 1972 (Joint Tactical Air Strike Request) sent to HHQ

Or Activate the AFARN if Immediate Air Strike Request is required

CLOSE AIR SUPPORT KEY PLANNING AND EXECUTION FACTORS

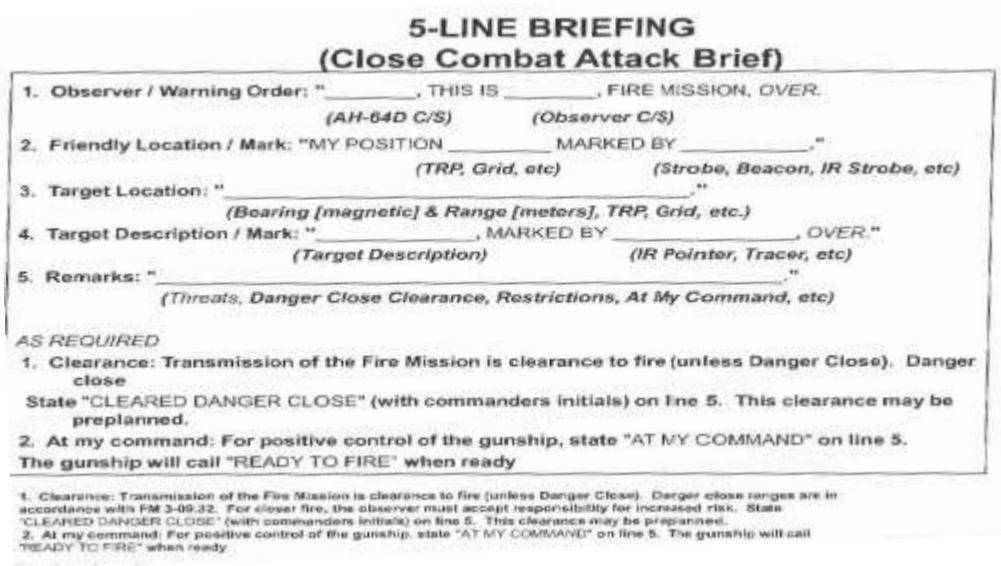
Smart Card for Battle Staff and Staff Planners

TARGET	THREAT	FRIENDLIES	WEAPONS
Commander's intent Desired effect Enemy Order of Battle Position and Number Movement Eyes-on Dug-in or Camouflaged Ability to Mark Target Type (1,2,3) Control Time Critical	Type Threat System(s) Type Guidance Location Capabilities Employment Doctrine SEAD Capability EW Capability Aircraft Counter Measures	Closest Friendlies Movement FEBA/FLOT Unit Locations Blue Force Tracking Ability Marking Procedures Friendly Order of Battle Scheme of Maneuver Scheme of Fires Disposition Supporting Arms	Type Weapon(s) Weapon-Target matching Min-safe (.1%PI) table Fusing/Dud rate Collateral Damage Targeting Pod capability Target Verification Laser Guided Weapon Coordinate Dependent

FIRE SUPPORT COORDINATION	OTHER AGENCY COORDINATION	CAS MISSION PREPERATION	CAS MISSION EXECUTION
SEAD Availability Target Marking • Smoke • LASER • ILLUM FSCMs and C2 ACA Activation COLT Coordination Battery Positions Gun-Target Line Mac/Min Ordinate Aircraft Ingress Routes Aircraft Egress Routes	HHQ ASOC/DASC AWACS JSTARS FAC(A) Army Aviation • JAAT? • Battle Positions • MRRs • Deconfliction Plan RPV/UAV Support Adjacent Units OGA LNOs	Battle-Staff Rehearsal C2 Map Preparation JTAC Observation Position Target Area Weather Target Illumination Laser/IR Pointers Communication-Plan CAS Triggers Clearance Authority Urban	CAS Battle Drill Battle Tracking Danger Close JTAC CAS Control Clearance Authority Authentication Procedures Reattack Abort Procedures ***Post Mission***

CAS Control Smart Card
Fighter Check-In
(Aircraft transmits to Controller)
Aircraft: "_____", this is _____" Identification/Mission Number "____"
(Controller Call Sign) (Aircraft Call Sign)
Authenticate: "_____" Number and Type Aircraft: "____" Position and Altitude: "____"
(perATO/Spins)
Ordance:"____" Tiem on Sation: "____" Abort Code: "____"
Area Operation "AO" Update
(Controller transmits to Aircraft)
1. General Enemy Situtation
2. Threat Activity
3. General Friendly Situation
4. Friendly Artillery Activity
5. Remarks
a. Localied SEAD efforts (supression/EW)
b. Hazards(WX/Terrain/Obstruction)
CAS Briefing (9-Line)
(Controller transmits to Aircraft, Aircraft confirs with read-back)
Terminal Controller: "____, this is _____" Type _____Control"
(Aircraft Call Sign) (Terminal Controler) (1,2,3)
1. IP: "____"
2. Heading: "_____ Offset _____"
(Degrees Magnetic) (Left or Right)
3. Distance: "____" (Nautical Miles)
4. Target Elevation: "____" (in feet MSL)
5. Target Description: "____" (General description e.g Number/Type Movement)
6. Target Location: "____" (Lat/Long or Grid to include map datum"
7. Type Mark: "_____" Code: "_____" Laser to Target Line "____"
(WP, Laser, IR, Beacon) (Actual Code)
8. Location of Friendlies"____" Position marked by "____"
(From target, cardinal direction and distance in meters)
9. Egress:"____"
Remarks (as appropriate)"____"
(Restrictions, Threats, Ordinance Delivery, Hazards, ACAs, Weather, Additional Target info, SEAD, NGV Capabilitiy, Applicable Gun to Target Lines, Danger Close, Lser, Illumination, TOT, TTT with Hack ect.)
Read-back Requirement: Lines 4,6, all restrictors, and anything else required by the Controller

AC-130 Gunship Call for Fire
1. Observer/Warning Order"_____" This is "_____
(AC-130 C/S) (Observer US)
Fire Mission, Over"
2. Friendly Location/Mark "My Postion_____
(TRP, Grid, ect.)
Marked By _____"
(Strobe, IR Strobe, ect.)
3. Target Location"_____"
(Bearing (magnetic) & Range (m), TRP, Grid, ect.)
4. Target Description/Mark"_____" Marked By_____, Over"
(Target Description) (IR Pointer, Tracer, ect.)
5. Remarks"_____"
(Threats, Danger Close Clearance, Restrictions, At My Command, ect.)
AS Required
1. Clearance: Transimission of Fire Mission is Clearance to fire (unless Danger Close). Danger Close is 200m with the 105mm, and 125m with the 40mm and the 25mm. For closer fire, the observer must accept responsibility for increased risk.
2. At my command: For possitive control of a Gunship, state "At my Command" on fire 5. The Gunship will call "Ready to Fire" when ready
Adjusting AC-130 Gunship Fire
Only adjust for marking rounds or wrong target. Adjust from impact by giving range (m) and cardinal direction (North, South, East, West)
To move burn, say "MOVE BURN" or "ROLL BURN"
Once burn is over target, say "FREEZE BURN" (if you say "STOP BURN" they will turn it off)



5-LINE BRIEFING
(Close Combat Attack Brief)

1. **Observer / Warning Order:** "_____, THIS IS _____, FIRE MISSION, OVER.
   (AH-64D C/S) *(Observer C/S)*
2. **Friendly Location / Mark:** "MY POSITION _____ MARKED BY _____."
   (TRP, Grid, etc) *(Strobe, Beacon, IR Strobe, etc)*
3. **Target Location:** "_____."
   (Bearing [magnetic] & Range [meters], TRP, Grid, etc.)
4. **Target Description / Mark:** "_____, MARKED BY _____, OVER."
   (Target Description) *(IR Pointer, Tracer, etc)*
5. **Remarks:** "_____."
   (Threats, Danger Close Clearance, Restrictions, At My Command, etc)

AS REQUIRED

1. **Clearance: Transmission of the Fire Mission is clearance to fire (unless Danger Close). Danger close**
   State "CLEARED DANGER CLOSE" (with commanders initials) on line 5. This clearance may be preplanned.
2. **At my command: For positive control of the gunship, state "AT MY COMMAND" on line 5.**
   The gunship will call "READY TO FIRE" when ready

1. Clearance: Transmission of the Fire Mission is clearance to fire (unless Danger Close). Danger close ranges are in accordance with FM 3-09.32. For closer fire, the observer must accept responsibility for increased risk. State "CLEARED DANGER CLOSE" (with commanders initials) on line 5. This clearance may be preplanned.
2. At my command: For positive control of the gunship, state "AT MY COMMAND" on line 5. The gunship will call "READY TO FIRE" when ready

JFIRE TARGET-WEAPONS

Table 28: Recommended Target-Weapons Pairings for Aircraft Ordnance

Targets	*Recommended Aircraft Ordnance*
Armored Vehicles (tanks, APCs, and mobile assault guns)	Maverick, Hellfire, TOW, LGB (GBU-10/-12/-16/-24) JDAM* or GP bomb (with inst. fuze) CBU-87 CEM, CBU-89 Gator (mine), CBU-97 SFW CBU-103/-104/-105 (WCMD)* JSOW*, GBU-15, AGM-130 30 mm (API/HEI)
Area denial and channelization	CBU-89 Gator (mine), CBU-104
Soft target (trucks, radar,aircraft parked, etc.)	Maverick, GP bomb, JDAM*, JSOW*, Hellfire, TOW, 20 mm or 30 mm gun (API/HEI) 25 mm, 40 mm or 105 mm gun (AC-130) CBU-87/CBU-103, 2.75" Rockets (w/ M281, M229, M151)

Artillery, AAA, Rocket Launcher	*Recommended Aircraft Ordnance*
In Open	CBU-87/-97/-103/-105, JSOW, GP bomb, JDAM, LGB (GBU-10/-12/-16/-24), EO/IR guided munition (Maverick, Hellfire, TOW, GBU-15/EGBU-15 or AGM-130), 2.75" Rockets (w/ M255E1/WDU-4A/A Flechette, M261, M229, M151), 30 mm, 40mm gun
In revetment	CBU-97, GP bomb, JDAM, LGB (GBU-10/-12/-16/-24), Maverick, Hellfire, 30mm, GBU-15/EGBU-15, AGM-130, 2.75" Rockets (w/ M261, M229, M151)
In covered position	GP bomb, JDAM, LGB (GBU-10/-12/-16/-24), Maverick, GBU-15/EGBU-15, AGM-130, Hellfire, 2.75" Rockets (w/ M229, M151)
Surface-to-Air Missile (SAM) site	HARM followed by CBU-87/-97/-103/-105, JSOW, JDAM, GP bomb, LGB (GBU-10/-12/-16/-24), Maverick, Hellfire, TOW, GBU-15/EGBU-15, AGM-130, 2.75" Rockets (w/ M261, M229, M151)
Surface-to-Surface Missile site	Same as SAM, above (except delete AGM-88 HARM)

Personnel	
In the open	GP bomb, JDAM, 20 mm, 25 mm, 30 mm, 40mm, 105mm CBU-87 CEM, CBU-103, 2.75" Rockets (w/ M229, M151, M261, M255E1/WDU-4A/A Flechette)
In fighting positions /prepared positions	GP bomb, JDAM*, 2.75" Rockets (w/ M261, M229, M151)
Under light cover	GP bomb, JDAM*, 20 mm, 25 mm, 30 mm, 40mm, 2.75" Rockets (w/ M229, M151) CBU-87 CEM, CBU-103
Under heavy cover (concrete bunker)	GP bomb or JDAM (w/BLU-109/-110) GP bomb with steel nose plug LGB (CBU-10, -24, -28), Maverick, GBU-15/EGBU-15, AGM-130
Buildings	GP bomb or JDAM, LGB (GBU-10, -24, -28), Maverick, GBU-15/EGBU-15, AGM-130, Hellfire, 2.75" Rockets (w/ M229, M151)
*WCMD, JSOW and JDAM recommended against stationary targets only	

INFORMATION OPERATIONS

Commanders can use **OFFENSIVE IO** capabilities to:

- Destroy. To damage a system or entity so badly that it cannot perform any function or be restored to a usable condition without being entirely rebuilt.
- Disrupt. To break or interrupt the flow of information.
- Degrade. To reduce the effectiveness or efficiency of adversary C2 and information collection efforts or means. IO can also degrade the morale of a unit or reduce the target's worth.
- Deny. To prevent the adversary from accessing and using critical information, systems, and services.

Commanders can use DEFENSIVE IO capabilities to accomplish the following:

√ Protect. To take action to guard against espionage or capture of sensitive equipment and information.

√ Detect. To discover or discern the existence of an intrusion into information systems.

√ Restore. To bring information and information systems back to their original state.

√ Respond. To react quickly to an adversary's IO attack.

CORE ELEMENTS:

- ⇨ OPSEC
- ⇨ PSYOP
- ⇨ Military Deception
- ⇨ Electronic Warfare
  - Electronic Attack
  - Electronic Protection
  - Electronic Warfare Support
- ⇨ Computer Network Operations
- ⇨ Computer Network Attack
- ⇨ Computer Network Defense
- ⇨ Computer Network Exploitation

SUPPORTING ELEMENTS:

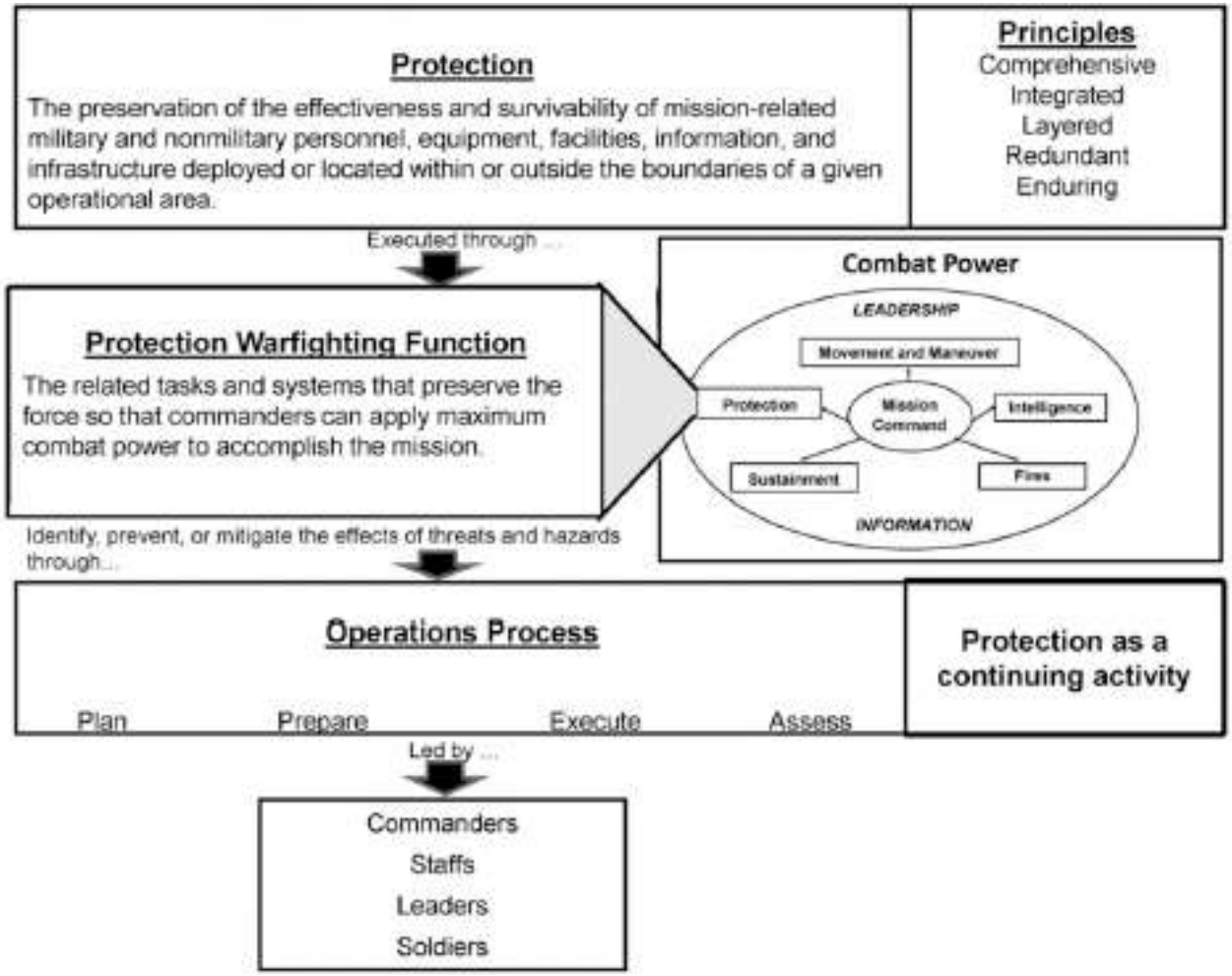
- ⇨ Physical Destruction
- ⇨ Information Assurance
- ⇨ Physical Security
- ⇨ Counterintelligence
- ⇨ Counter-deception
- ⇨ Counterpropaganda

RELATED ACTIVITIES:

- ⇨ Public Affairs
- ⇨ Civil-Military Operations

Reference FM 3-13 p. 1-16

Protection



Protection Principles

•Comprehensive. Protection is an all-inclusive utilization of complementary and reinforcing protection tasks and systems available to commanders, incorporated into the plan, to preserve the force.

•Integrated. Protection is integrated with other activities, systems, efforts, and capabilities associated with unified land operations to provide strength and structure to the overall effort. Integration must occur vertically and horizontally with unified action partners throughout the operations process.

•Layered. Protection capabilities are arranged using a layered approach to provide strength and depth. Layering reduces the destructive effect of a threat or hazard through the dispersion of energy or the culmination of the force.

•Redundant. Protection efforts are often redundant anywhere that a vulnerability or a critical point of failure is identified. Redundancy ensures that specific activities, systems, efforts, and capabilities that are critical for the success of the overall protection effort have a secondary or auxiliary effort of equal or greater capability.

•Enduring. Protection capabilities are ongoing activities for maintaining the objectives of preserving combat power, populations, partners, essential equipment, resources, and critical infrastructure in every phase of an operation.

Engineer Cheat Sheet for Defense

Engineer Survivability Planning Factors

Team Type	1x Hull Down	1x Turret Down	1x 3-Tier
ACE	2.5 hr	5 hr	7.5 hr
DOZER	1.667 hr	3.333 hr	5 hr

Position Type	Purpose	1x Position time
Hasty Berm	Tanks/BFV/Mortar	1 hr
Deep-cut	HQ/Artillery	1.5-2 hr
2-man position	Infantry	30 min (HMEE)
MG or ATGM	Infantry	1 hr (HMEE)

Dig Planning:
- **Recon & Mark prior**
- **Assign Dig-meister to maintain schedule**
- **Proof position with vehicle prior to releasing asset to next**

Sustainment Planning:
M9 ACE – 134 gallons
Every 6-8 hrs of digging
Dozer – 130 gallons
Every 6-8 hrs of digging
Plan 10% down time for maintenance

Obstacle Types:
Tactical – shaping the enemy into your fires
Protective – keeping the enemy out of your BP

Obstacle Effects:
Disrupt – should effect ½ avenue of approach
Turn – must tie in with terrain with complexity and appear "easier" in the direction you want to turn
Fix – should appear "easier" to breach
Block – should appear "intense" to breach and must be complex and well covered with fire

Field Expedient Obstacles:
Abatis – fall trees at angles towards enemy
Log hurdles – stake large logs down or piles of logs
Craters – explosives made road blocks

Anti-tank ditch dig rates:
ACE/ACE, Dozer/Dozer: 50m per hour
***ACEs make a better AT ditch than dozers**

300m wire obstacle type	# C wire (15m roll)	# barbed wire (400m roll)	# pickets	# man hrs
Cattle fence		7	100 L, 2 S	24
Double Apron		15	100 L, 200 S	71
Triple Strand	59	3	160 L, 4 S	30
11 Strand anti-vehicle	220	9	660 L, 22 S	110

COMMANDER'S M/CM/S GUIDANCE
•Purpose – of obstacles, survivability, mobility
•Effort – Prioritize M, CM, S
Consider different priorities for: offense, defense, consolidation
Equipment may be different than personnel
•Work – Prioritize work you want accomplished
Consider units, BPs, EAs, sector wpns systems
Where do you want to engage the enemy
Main avenue vs secondary avenue of approach
Initial positions vs positions in depth
•Scatterable Mine Guidance – Delegation, Restrictions
•Obstacle Restrictions – Counterattack routes
•Guidance to S3 / S4 – Barrier material positioning / allocation
•Guidance to Co CDRs – Making breaches / lanes
Obstacle siting Target turnover Lane closure Securing obstacles Controlling blade assets Labor support

DEMOLITION CARD

GTA 05-10-033

[illegible]

DISTRIBUTION: Active Army, ARNG, USAR. [illegible]

Table 1. Characteristics of block demolition charges

Explosive	Size (pounds)	Size (inches)	Detonation Velocity		RE Factor	Packaging/Weight
TNT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table 2. Safe distances for personnel in the open [illegible]

Explosive Weight (pounds)	Safe Distance feet	Safe Distance meters	Explosive Weight (pounds)	Safe Distance feet	Safe Distance meters
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

For charges over 500 pounds, use the following:

- Distance in feet = 300 × [illegible]
- Safe distance in meters = 100 × [illegible]
- Minimum distance for personnel in a missile-proof shelter is 328 feet.

Safety Reminders

1. [illegible]
2. [illegible]
3. Always handle explosives carefully.
4. [illegible]

5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]

Conversion factors for all tables

- 1 meter = 3.28 feet
- 1 kilogram = 2.2 pounds
- 1 foot = 0.3048 meter
- 1 pound = 0.454 kilogram

Problem solving format

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. Calculate number of charges.
6. Calculate total amount of explosive.

Table 3. Safe distances for blasting near radio frequency energy

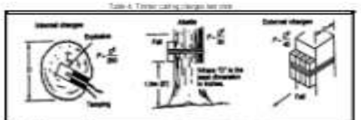
Average or Peak Transmitter Power (watts)	Minimum Safe Distance (meters)
[illegible]	[illegible]

Electric Power Lines. [illegible]

Caution. [illegible]

Note (for Table 4): [illegible]

Table 4. Timber cutting charges (lbs of TNT)



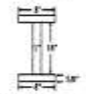
Type of charge	Explosive	Least dimension of timber (inches)											
Internal	Any	[illegible]											
External	TNT	[illegible]											
Abatis	TNT	[illegible]											

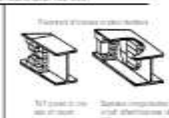
Rules of Thumb

1. [illegible]
2. [illegible]
3. [illegible]

Steel Cutting Charges

[illegible]





Step 1. [illegible]
Step 2. [illegible]
Step 3. [illegible]
Step 4. [illegible]
Step 5. [illegible]
Step 6. [illegible]

Table 5. Steel-cutting charges for TNT

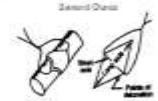
[illegible]
[illegible]

To use Table 5:

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

Special Demolition Techniques

Diamond Charge



[illegible]

Saddle Charge

[illegible]

Ribbon Charge

[illegible]

Counterforce Charge

[illegible]

Explosively Shaped Charge

[illegible]

Platter Charge

[illegible]

Special Demolition Techniques (continued)

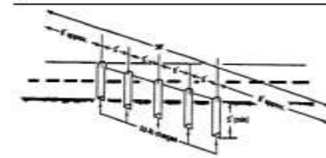
Material	[illegible]			[illegible]		
Reinforced concrete	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Armor plate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Rules of Thumb

1. [illegible]
2. [illegible]
3. [illegible]

Cratering Charges

[illegible]

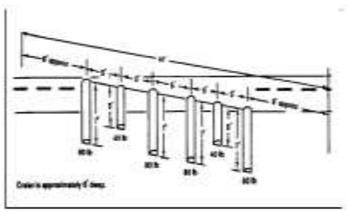


Hasty Crater

[illegible]

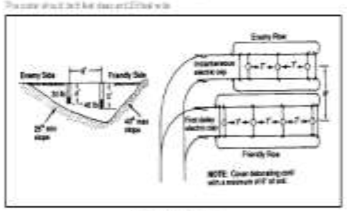
Notes:

1. [illegible]
2. [illegible]
3. [illegible]



Deliberate Crater

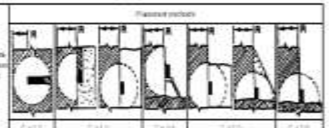
[illegible]



Relieved-Face Cratering

[illegible]

Table 6. Breaching charges for reinforced concrete



[illegible]
[illegible]

Table 7. Conversion factors for material other than reinforced concrete

Material	Conversion Factor
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Breaching Charges

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

Example: [illegible]

Breaching charge formula

$P = R^3KC$

[illegible]

Number of charges

[illegible]

Rules of Thumb

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

Table 8. Material factor (K) for breaching charges

Material	Breaching Radius (R)	K
[illegible]	[illegible]	[illegible]

Breaching charge formula

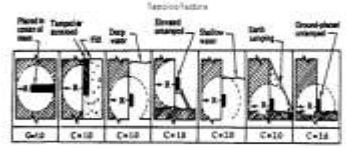
$P = R^3KC$

[illegible]

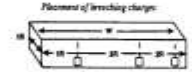
Number of charges

[illegible]

Tamping factors



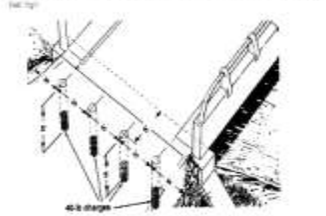
Placement of breaching charges



Bridge Abutment Destruction

For abutments that are 5 feet or less thick—

[illegible]



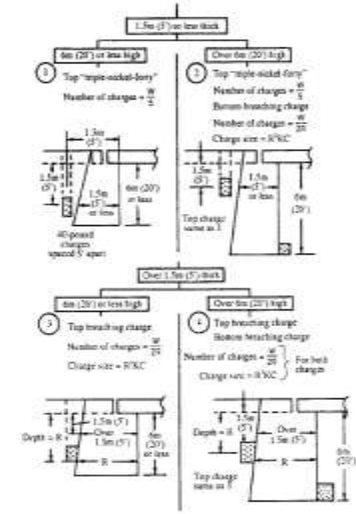
For abutments that are more than 5 feet thick—

[illegible]

Abutment Destruction

Notes:

1. [illegible]
2. [illegible]



[illegible]

Notes: [illegible]

Mine Clearing Line Charge (MICLIC)

- Description: Rocket propelled, explosive line charge that uses overpressure to activate mines, destroy wire obstacles, and clear lanes
- Use
  - Lane reduction
- Key Specs
  - 2x 100m long lanes reduced per shot
    - (8m x 100m cleared area)
  - 1750lbs C4 per shot
- Advantages
  - Quickly reduces multiple lanes
  - Minimal risk to friendly troops
  - Can be towed by variety of vehicles (versatility)
  - Psychological impact on enemy (massive explosion)
- Disadvantages
  - Diminished effectiveness against buried mines between .75m and 1.5m from charge center-line
  - Has little/no effect on ditches, walls, concrete

Assault Breacher Vehicle (ABV)

- Description: Single-platform, multi-purpose minefield breaching system built on the M1A1 tank chassis.
- Use
  - Detect, Reduce, Proof, Mark
- Key Specs
  - Blade Width: 4.4m
  - Has automatic marking system
  - MICLIC (X2)
    - 2x 90m long lanes reduced per shot
    - (8m x 90m cleared area)
    - 1750lbs C4 per shot

Mine Clearing Blade (MCB)

- Description: Toothed blade lifts and pushes surface laid and buried mines to the side of track-width lanes.
- Use
  - Primary: Reduce minefield lanes
  - Alternate: Detect minefield, proof reduced lane
- Key Specs
  - Blade Width: 4.5m
  - Width of Each Track: 1m
  - Clearing Speed: 6mph
- Advantages
  - Effective against all mine types
  - Speed
  - Electric motor raises when not clearing
- Disadvantages
  - Disturbed mines may damage blade
  - Magnetic, seismic, double-pressure
  - mines in spoil may damage vehicle

Mine Clearing Roller (MCR)

- Description: Roller assembly mounted to M1A1/2 to detonate pressure and tilt-rod mines ahead of tank and prevent damage.
- Use
  - Primary: Minefield detection, proofing
  - Emergency: Minefield reduction
- Key Specs
  - Roller Width: 4m
  - Width of Each Track: 1.1m
  - Damage Rating: Will survive 2 AT mine detonations
  - Effective Speed: 10mph
- Advantages
  - Fast compared to other means
  - Effective against pressure,
  - tilt-rod mines
- Disadvantages
  - Added weight, diminished
  - maneuverability
  - Risk of pressure-detonated mines
  - between cleared tracks

BREACHING FUNDAMENTALS(SOSRA)

Breaching fundamentals (SOSRA) always apply; however, they must adapt to the varying factors of METT-TC. Breaching fundamentals include:

Suppression. Units use direct and indirect suppressive fires to protect friendly forces reducing and maneuvering through an obstacle. Typically, successful suppression initiates the rest of theactions at the obstacle.

Obscuration. Smoke degrades enemy observation and target acquisition by enemy forces while concealing friendly force reduction and assault activities. Obscuration planning factors include wind direction, type of obscuration systems available (mechanical smoke, artillery-delivered, mortar-delivered, smoke pots), and the capabilities and limitations of these systems. Typically, the most effective placement of obscuration is between the obstacle and the overwatching enemy forces.

Secure. Friendly forces secure the point of breach to prevent enemy forces from interfering with the reduction of lanes and passage of assault forces. The CAB must provide the breach force with sufficient combat power to secure the point of breach.

Reduction. The creation of lanes through an obstacle is reduction. Units cannot accomplish
reduction until they achieve effective suppression and obscuration, and secure the point of
breach. The breach force reduces, proofs, and marks the required number of lanes to pass the
assault force through the obstacle. Follow-on forces will continue to improve and reduce the
obstacle when required.

Assault. The assault force's primary mission is to seize terrain on the far side of the obstacle toprevent the enemy from placing or observing direct and indirect fires on the reduction area.

Table 11-1. Breaching organization

Breaching Organization	*Breaching Fundamentals*	*Responsibilities*
Support force	Suppress. Obscure.	Support by fire (SBF). Suppress enemy with direct and indirect fires. Control obscuring smoke (on the enemy) and screening smoke (on friendly movement). Prevent enemy forces from repositioning or counterattacking to place direct fires on the breach force.
Breach force	Suppress (provides additional suppression). Obscure (provides additional obscuration in the reduction area). Secure (provides local security). Reduce.	Search for a bypass. Establish near-side security. Reduce the obstacle. Proof and mark lanes or bypasses. Establish far-side security. Defeat forces that can place immediate direct fires on the reduction area. Report the lane status and location.
Assault force	Assault. Suppress (if necessary).	Assist the support force with suppression if the enemy is not effectively suppressed. Secure the far side of an obstacle. Destroy any enemy forces capable of placing direct fires on the reduction area from the far side of an obstacle. Be prepared to breach follow-on and protective obstacles after passing through the reduction area.

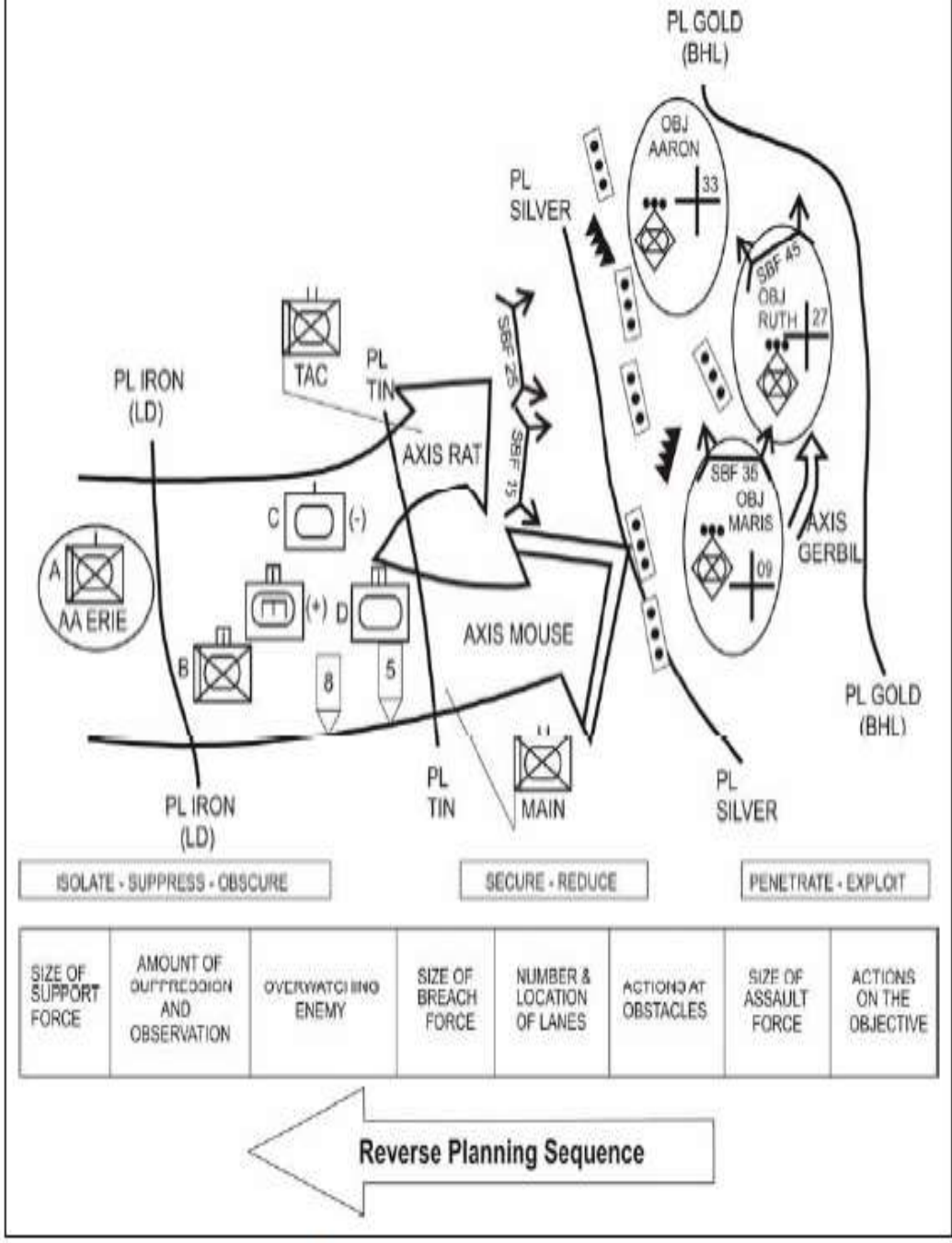


Figure 11-1. Breach reverse planning sequence

BREACH PLANNING CONSIDERATIONS

INTELLIGENCE
- Analyze AA's, MC's
- Template obstacles and collect OBSTINTEL

MANEUVER
- Task Organize for Breaching Operations
- Select breach site location and number of lanes
- Specify conditions for committing the breach force
- Plan for the 7 Forms of Contact at the Breach Site

FIRE SUPPORT
- Plan suppression - echelon FA and mortars
- Employ obscuring / screening smoke
- Plan FA radar at the Breach Site

MOBILITY/SURVIVABILITY
- Select primary and alternate reduction methods
- Allocate / task organize reduction assets
- Plan 50% redundancy of reduction assets
- Plan for transition to defense

AIR DEFENSE
- Protect breach sites

CSS
- Plan sufficient CL V for Suppression & Obscuration
- Plan MICLIC / explosives resupply
- Plan movement / positioning of defensive CL IV/V

C2
- Conduct full-dress breach rehearsal
- Plan guides at breach lane entrance

BREACHING ORGANIZATION
Assault Breach Support

BREACHING FUNDAMENTALS
Suppress Obscure
Secure Reduce
Assault

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

BLUF: MANEUVER CDR MUST PLAN FOR & SET THE CONDITIONS NECESSARY TO ENSURE BREACH SUCCESS

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)

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)

Artillery Battery Smoke Consumption

Mission Duration (min)	2	5	10	15
155-mm HC (2,800m x 50 m)		16 rds	40 rds	56rds
155-mm WP (1,200m x 50 m)	24 rds	48 rds		128 rds
105-mm WP (450m x 35 m)	18 rds	36 rds		96 rds

Mortar Platoon Smoke Consumption

Mission Duration (min)	2	5	15
107-mm WP (600m x 40 m)	12 rds	27 rds	72 rds
81-mm WP (300m x 35 m)	12 rds	27 rds	72 rds
60-mm WP (225m x 35 m)	12 rds	27 rds	72 rds

TF Breach EXCHECK

	ACTION	ELEMENT	CONTROLLED BY	CONDITIONS THAT MUST BE MET
1	ID Obstacle/ Take Actions on Contact	Force in Contact	CO CDR	Return Fire, Call for indirect fire/smoke, seek a bypass
2	**SUPPRESS** the far side of the obstacle.	SPT Force	SPT Force CDR	
a	SBF etsablished / Achieve fire superiority	SPT Force	SPT Force CDR	Enemy overwhelmed by effective direct fire.
b	Identify / Confirm Point of Breach	SPT Force	SPT Force CDR	POB identified at ancor point or confirmation of recon
c	Call for Fire	SPT Force	SPT Force CDR	Priority of all fires to support force -EFST of Suppress achieved
3	**OBSURE** the point of breach	SPT Force	SPT Force CDR	
a	Call for Immediate Smoke or MTR WP	SPT Force	SPT Force CDR	Far side of POB obscured - enemy unable to effectively see
b	Use Smoke from Smoke PLT or Smoke Pot	SPT Force	SPT Force CDR	Far side of POB obscured - enemy unable to effectively see
4	**SECURE** the breach site	SPT & BREACH Force	Breach Force CDR	
a	Support Force continues to suppress	SPT Force	SPT Force CDR	Far side of POB obscured - enemy unable to effectively see
b	Breach Force establishes SBF vic POB	BREACH Force	Breach Force CDR	Near Side Securit set. POB isolated. POF shifts to breach Force.
5	**REDUCE** the obstacle	BREACH Force	Breach Force CDR	
a	Call forward AVLM(62 m away from POB)	BREACH Force	Breach Force CDR	AVLM set and MICLIC prepped to Fire.
b	Fire MICLIC	BREACH Force	Breach Force CDR	All vehicles buttoned up - infantry/ engineers seek cover.
c	Detonate MICLIC	BREACH Force	Breach Force CDR	Obstacle reduced / lane created. Refire if necessary.
d	Clear lane with a tank plow or ACE	BREACH Force	Breach Force CDR	Lane cleared. Reposition & Refire MICLIC if obstacle >200 wide
e	Proof Lane with ACE	BREACH Force	Breach Force CDR	Lane proofed.
6	**ASSAULT** thru the lane to far side/OBJ	BREACH Force	Breach Force CDR	
a	Breach Force assaults to seize far side	BREACH Force	Breach Force CDR	Far side seized. Local SBF established. Shift fires accordingly.
b	Mark the Lane	BREACH Force	Breach Force CDR	Lane Marked for TF Assault Force.
c	Assault thru the lane to the Objective	ASSAULT Force	Assault Force CDR	POF shifts to assault force.
d	Shift direct fires accordingly	SUPPORT Force	Support Force CDR	Fires shifted away from direction of assault IAW SDZ
e	Lift direct fires accordingly	BREACH FORCE	Breach Force CDR	Fires lifted IAW SDZ
f	Indirect fires shifted	ASSAULT Force	Assault Force CDR	IDF shifted to support assault IAW REDs
g	Assault force destroys enemy / seize DP	ASSAULT Force	Assault Force CDR	Decisive Point seized. Enemy destroyed.
h	Support Force BPT continue the ATK	Support Force	Support Force CDR	Reposition from SBF and maneuver thru breach
I	Consolidate / Reorganize / Second Lane	Breach Force	Breach Force CDR	Execute 2nd Lane for Task Force out of contact.

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	Fuse 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

FIGURE 5 – RESOURCE FACTORS

OBSTACLE EFFECTS	DISRUPT	FIX	TURN	BLOCK
RESOURCE FACTORS	0.5	1.0	1.2	2.4

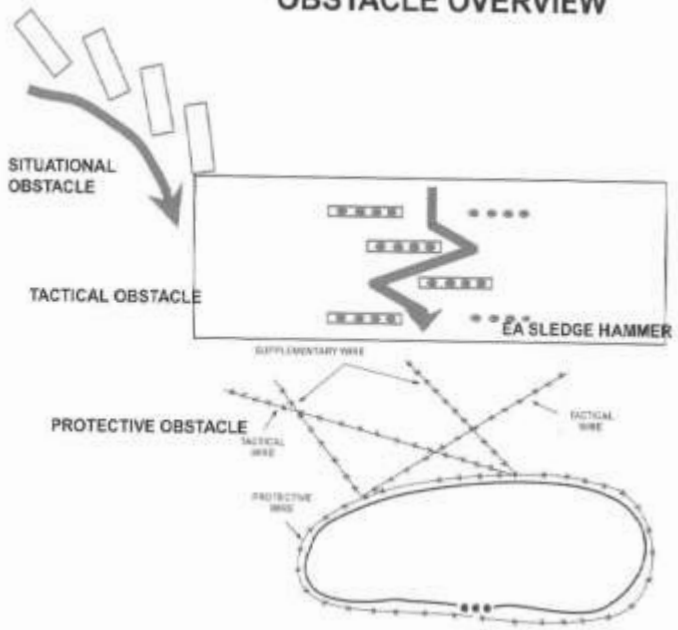
FIGURE 6 – STANDARD ROW MINEFIELD DIMENSIONS

TYPE OF MINEFIELD	DISRUPT	FIX	TURN	BLOCK
FRONTAGE (m)	250	250	500	500
DEPTH (m)	100	120	300	320

FIGURE 7 – STANDARD MINEFIELD RESOURCE REQUIREMENTS

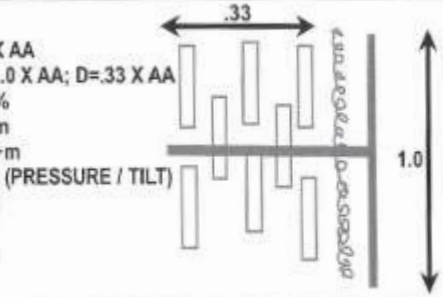
TYPE OF MINEFIELD	DISRUPT	FIX	TURN	BLOCK
FULL WIDTH AT MINES (M21)	42	63	336	378
TRACK WIDTH AT MINES (M15/M19)	84	84	168	168
AP MINES (M14/M16)				84 *Korea only*
ROLLS CONCERTINA WIRE	81	84	165	168
PICKETS	81	84	165	168

OBSTACLE OVERVIEW



BLOCKING OBSTACLE

RESOURCE FACTOR	2.4 X AA
GROUP DIMENSIONS	W=1.0 X AA; D=.33 X AA
PROBABILITY OF KILL	100%
FRONTAGE	500m
DEPTH	300+m
ANTI-TANK MINES	YES (PRESSURE / TILT)
ANTI-PERSONNEL MINES	YES
ANTI-HANDLING DEVICES	YES
IRREGULAR OUTER EDGE	YES



A BLOCK MINEFIELD IS DESIGNED SPECIFICALLY TO STOP AN ENEMY'S ADVANCE ALONG A SPECIFIC AA OR ALLOW HIM TO ADVANCE AT EXTREMELY HIGH COST.

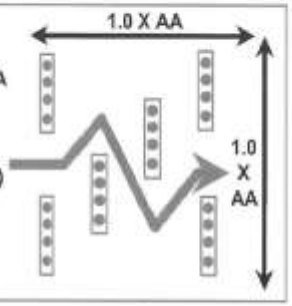
BLOCKING OBSTACLES ARE COMPLEX AND INTEGRATED WITH INTENSE FIRES; BLOCK MINEFIELDS DO NOT STOP AN ATTACKER BY THEMSELVES.

BLOCKING OBSTACLES MUST DEFEAT THE ENEMY'S BREACHING EFFORT, BOTH MOUNTED AND DISMOUNTED, AS WELL AS HIS MANEUVER.

THE BLOCK EFFECT MUST SPAN THE ENTIRE WIDTH OF THE AA AND MUST NOT ALLOW BYPASS.

FIXING OBSTACLE

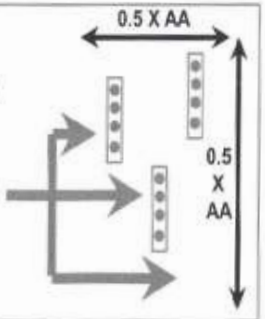
RESOURCE FACTOR	1.0 X AA
GROUP DIMENSIONS	W=1.0 X AA; D=1.0 X AA
PROBABILITY OF KILL	50%
FRONTAGE	250m
DEPTH	120m
ANTI-TANK MINES	YES (PRESSURE / TILT)
ANTI-PERSONNEL MINES	NO
ANTI-HANDLING DEVICES	NO
IRREGULAR OUTER EDGE	YES



THIS IS THE MOST MISUNDERSTOOD OBSTACLE EFFECT. THE TERM DOES NOT MEAN TO STOP AN ENEMY ADVANCE. A FIX EFFECT SLOWS THE ENEMY WITHIN A SPECIFIED AREA, NORMALLY AN EA, SO THAT HE CAN BE DESTROYED WITH FIRES. THE PRIMARY USE OF THE FIX EFFECT IS TO GIVE THE DEFENDER TIME TO ACQUIRE, TARGET, AND DESTROY THE ATTACKING ENEMY THROUGHOUT THE DEPTH OF N EA OR AA. FIX MINEFIELDS IN THE GROUP MUST BE EMPLOYED IN DEPTH, CAUSING THE ENEMY FORMATION TO REACT AND BREACH REPEATEDLY. FIXING GROUPS MUST SPAN THE ENTIRE WIDTH OF THE AA.

DISRUPTING OBSTACLE

RESOURCE FACTOR	0.5 (3 PT OBST) X AA
GROUP DIMENSIONS	W=0.5 X AA; D=0.5 X AA
PROBABILITY OF KILL	50%
FRONTAGE	250m
DEPTH	100m
ANTI-TANK MINES	YES (PRESSURE / TILT)
ANTI-PERSONNEL MINES	NO
ANTI-HANDLING DEVICES	NO
IRREGULAR OUTER EDGE	NO

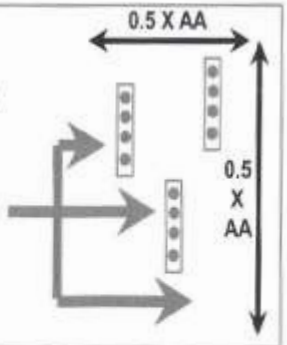


A DISRUPT EFFECT BREAKS UP THE ENEMY'S FORMATIONS, CAUSES PREMATURE COMMITMENT OF BREACH ASSETS, INTERRUPTS COMMAND AND CONTROL, ALTERS TIMING, AND CAUSES A PIECEMEALED COMMITMENT OF ATTACKING UNITS.

DISRUPT MINEFIELDS SHOULD NOT BE TIME, MANPOWER, OR RESOURCE-INTENSIVE. THEY ARE USED FORWARD OF OR WITHIN ENGAGEMENT AREAS (EAs).

DISRUPTING OBSTACLE

RESOURCE FACTOR	0.5 (3 PT OBST) X AA
GROUP DIMENSIONS	W=0.5 X AA; D=0.5 X AA
PROBABILITY OF KILL	50%
FRONTAGE	250m
DEPTH	100m
ANTI-TANK MINES	YES (PRESSURE / TILT)
ANTI-PERSONNEL MINES	NO
ANTI-HANDLING DEVICES	NO
IRREGULAR OUTER EDGE	NO

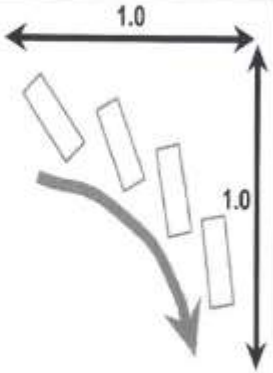


A DISRUPT EFFECT BREAKS UP THE ENEMY'S FORMATIONS, CAUSES PREMATURE COMMITMENT OF BREACH ASSETS, INTERRUPTS COMMAND AND CONTROL, ALTERS TIMING, AND CAUSES A PIECEMEALED COMMITMENT OF ATTACKING UNITS.

DISRUPT MINEFIELDS SHOULD NOT BE TIME, MANPOWER, OR RESOURCE-INTENSIVE. THEY ARE USED FORWARD OF OR WITHIN ENGAGEMENT AREAS (EAs).

TURNING OBSTACLE

RESOURCE FACTOR	1.2 X AA
GROUP DIMENSIONS	W=1.0 X AA; D=1.0 X AA
PROBABILITY OF KILL	75%
FRONTAGE	500m
DEPTH	300m
ANTI-TANK MINES	YES (PRESSURE / TILT)
ANTI-PERSONNEL MINES	NO
ANTI-HANDLING DEVICES	NO
IRREGULAR OUTER EDGE	NO



A TURN EFFECT MANIPULATES THE ENEMY'S MANEUVER IN A DESIRED DIRECTION. ONE TECHNIQUE OR A COMBINATION OF THREE TECHNIQUES AID IN ACHIEVING THE TURN EFFECT.

FIRST - THE OBSTACLE MUST HAVE A SUBTLE ORIENTATION TO ENTICE THE ENEMY TO MANEUVER IN THE DESIRED DIRECTION RATHER THAN BREACH THE OBSTACLE.

SECOND - THE BYPASS MUST BE EASILY DETECTED IN ORDER TO ENTICE THE ENEMY TO IT.

FINALLY - THE POINT WHERE THE TURN IS TO BE INITIATED IS ANCHORED BY NO-GO TERRAIN OR HEAVILY FORTIFIED FORCES.

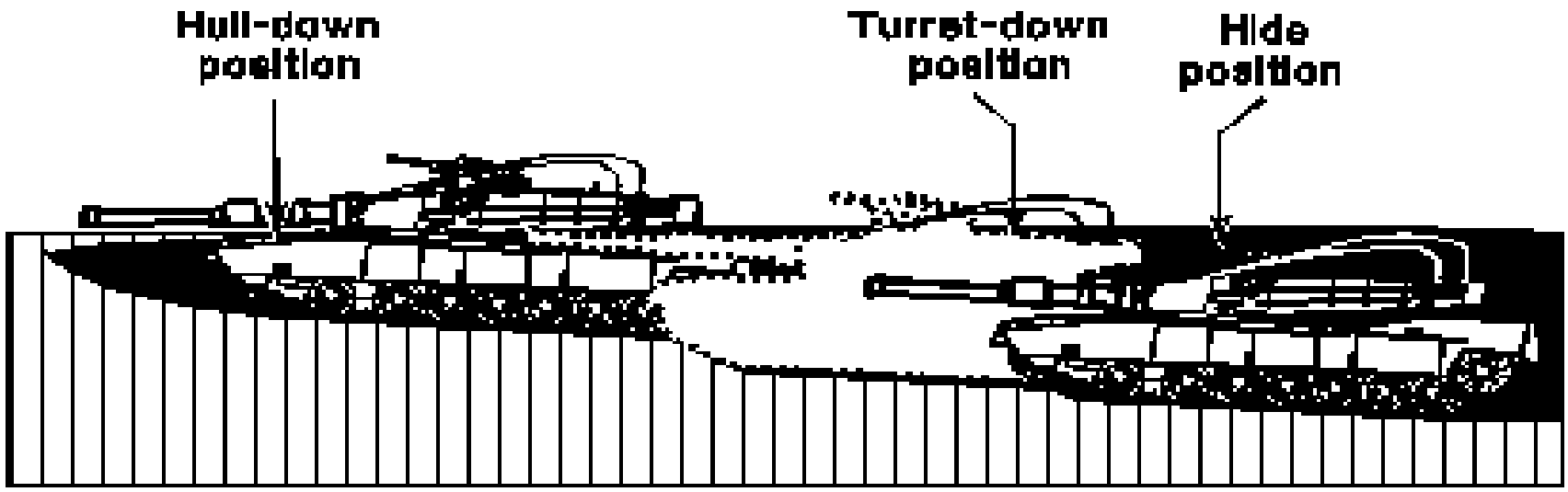
FIGURE 8 - OTHER STANDARD OBSTACLE RESOURCE REQUIREMENTS

Triple Standard Concertina (300m) – 160 long & 4 short pickets, 4 reel barbed wire, 39 rolls concertina
Hasty Road Crater – 5 X 40 lb crater charges, 50 lbs TNT, 5 X 40 lb shaped charges, 200' det cord, 20' time fuse, 4 fuse igniters, non electric blasting caps
Concertina Roadblock – 30 long pickets, 22 short pickets, 1 reel barbed wire, 11 rolls concertina
Fratricide Fence (100m) – 25 reel barbed wire, 10 long pickets, 7 mine signs OR 7 rolls concertina, 8 long pickets, 7 mine signs
Bridge Demolition – Calculate IAW Chapter 4, FM 5-250

FIGURE 13 – SCATMINE PLANNING FACTORS

TYPE OF SYSTEM				MF SIZE	SD TIMES	ARM TIME
ADAM		RAAMS			4/48 hrs	45sec
Area	Linear	Area	Linear			
0.0005	0.1	0.001	0.2	Disrupt: 200x200m		
0.0005	0.1	0.002	0.4	Fix: 200x200m		
0.001	0.4	0.002	0.8	Turn: 400x400m		
0.002	0.8	0.004	0.6	Block: 400x400m		
VOLCANO 1 Load 160 canisters 960 mines (800 AT/160 AP)				Turn/Block: Grd: 555x320 (1 MF per Load) Air: 557x320 Fix/Disrupt: Grd: 277x120 (4 MF per Load) Air: 278x120	4 hrs/ 5/15 days	2.5 min AT 4 min AP
MOPMS Layout IAW Chapter 3, FM 20-32				Individual: 70x35m Disrupt: 280x70 (4 MOPMS) Fix: 280x105 (5 MOPMS)	4 hrs* *Can be recycled 3 times for a total of 13 hrs	2 min
HORNET Layout IAW Chapter 4, FM 20-32				Individual: 100m circle Area Disruption: 1000x1000 (20 Hornets) Gauntlet: 200x7000-18000m (40-50 Hornets) Obstacle Reinforcement: 200m x Length of minefield being reinforced	4/48 hrs/ 5/15/30 days	MANUAL 5-6 min REMOTE 36 min
GATOR				650x200m	4/48 hrs 15 days	2 min

Hull-Down, Turret-Down, Defilade, Fighting Positions.



-**Berms attract attention. Dig down, not up.**

-**Do not put spoll to the front, sides or rear of the firing position. Reduce spoll so that it blends into existing terrain.**

-**Tie down all antennas and keep reflective surfaces covered.**

-**Make sure the firing position has a covered exit route and a covered route to the next firing position.**

-**Construct overhead cover and add camouflage to create a hide position if time and materials are available**

FIGURE 1 – STANDARD WORK RATES

SURVIVABILITY	TIME REQUIRED TO CONSTRUCT USING		
	D7	ACE	DEUCE
HULL DEFILADE POSITION (HDP) (M1 or M2)	1 BT H_1	1.5 BTH	1.75 BTH
TURRET DEFILADE POSITION (TDP) (M1 or M2)	2.5 BTH	3.5 BTH	3.5 BTH
HMMWV TOW POSITION	1.5 BTH	2 BTH	2 BTH
VEHICLE PROTECTIVE POSITION	.75 BTH	1 BTH	1.25 BTH
	SEE	HMEE	
DISMOUNT CREW SERVED WEAPON POSITION	1 hr	.75 hr	
INDIVIDUAL FIGHTING POSITION	0.5 hr	.33 hr	
DISMOUNTED INFANTRY COMPANY POSITION	12 hr	8 hr	

COUNTERMOBILITY	D7	ACE	DEUCE
ANTI-TANK DITCH (ATD)	1 BTH/70m	1 BTH/50m	1 BTH/20m
STANDARD DISRUPT MINEFIELD (w/ frat fence)	1.5 PH_2		
STANDARD FIX MINEFIELD (w/ frat fence)	1.5 PH		
STANDARD TURN MINEFIELD (w/ frat fence)	3.5 PH		
STANDARD BLOCK MINEFIELD (w/ frat fence)	5 PH		
TRIPLE STANDARD CONCERTINA	1PH/300m		
FRAT FENCE – SINGLE STRAND BARBED WIRE	1 PH/500m		
FRAT FENCE – SINGLE ROLL CONCERTINA	1 PH/800m		
ROAD CRATER	1.5 SH_3		
POINT MINEFIELD	1 SH		
CONCERTINA ROADBLOCK	1 SH		
BRIDGE DEMOLITION- MASSIVE	2 SH		
BRIDGE DEMOLITION- STEEL	1 SH		
MINE PREP AT TF CL IV/V SUPPLY POINT	1SH/100 mines		

Mask Removal with M256A1/
M256A2 Kits (15 Min)

1. After checking with M25A1 or M256A2, results are negative
2. Senior person selects one or two Soldiers. Have them:
   - Move to a shady place
   - Unmask for 5 minuets
   - Clear and reseal their masks
3. Observe them for 10 minute
4. If no symptoms appear, give the all clear
5. Watch for delayed symptoms

Have first-aid available

Without M256A1/ M256A2 Kits (35 Min)

1. Senior person select one or two Soldiers
2. Move to a shady place
3. Have Soldiers –
   - Take deep breath, hold it, and break seal
   - Keep eyes open for 15 seconds
   - Clear and reseal their masks
4. Observe them for 10 minutes. If there are no symptoms –
   - Break seal on mask and take 2 to 3 breaths
   - Reseal and clear their masks
5. Observe them for 10 minutes.
6. If there are no symptoms, unmask for 5 minutes and then remask
7. If no symptoms appear after 10 minutes, give the all clear
8. Watch for delayed symptoms

MOPP Gear Exchange
Buddy Team

Steps

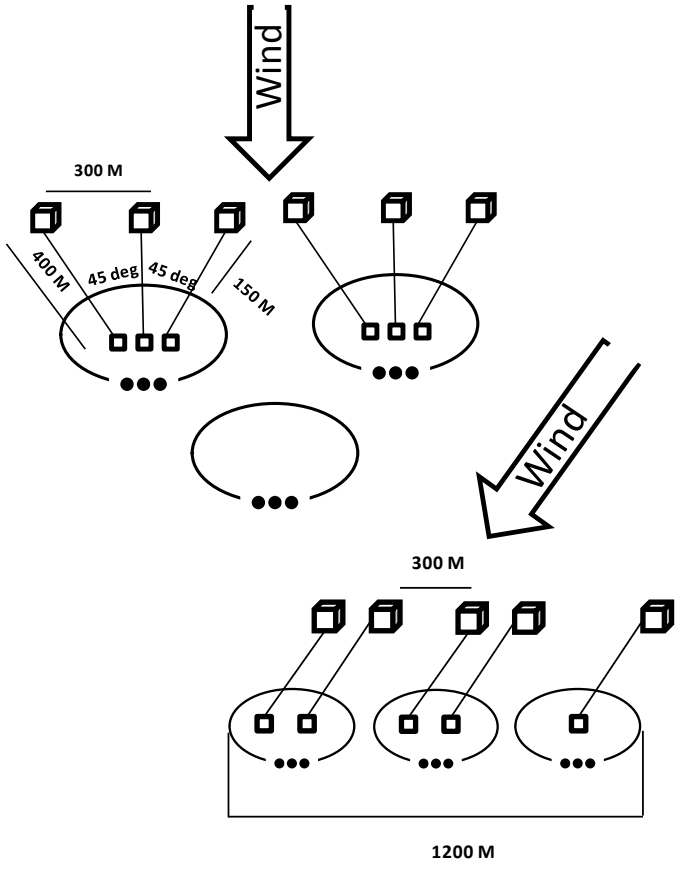
1. Decontaminate Individual Gear
2. Decontaminate Hood and Roll it up
3. Remove Over garments
4. Remove Over boots and Gloves
5. Put on Over garments
6. Put on Over boots and Gloves
7. Secure Hood
8. Repeat Steps 2 through 7 for buddy
9. Secure Individual Gear

Level	*Technique*	*Best Start Time*	*Responsibility*	*Advantages*
Immediate	Skin decontamination	Within 1 minute of contamination	Individual	Prevents agents from penetrating*
	Personal wipe-down	Within 15 minutes	Individual or crew	
	Operator spray-down	Within 30 minutes		
Operational	MOPP gear exchange**	Best done within 6 hours, but must be done within 24 hours	Contaminated unit	Provides temporary relief from MOPP4. Limits agent spread
	Vehicle wash-down***			
Thorough	DED	When mission allows/ reconstitution	Platoon leader or senior unit leader	Reduces MOPP long-term with minimal risk
	DTD			

* The techniques become less effective the longer they are delayed.

** Performance degradation and risk must be considered when exceeding 6 hours.

*** Vehicle washdown is most effective if started within one hour.



MECH DECONTAMINATION

	MOPP Gear Exchange	Hasty DECON By Squad w/o Support	Hasty DECO 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

Agent	Blister	Nerve	Unidentified Powder	Unidentified Liquid
Protection	MOPP 4 or as Advised	MOPP 4 or as Advised	MOPP 4 or as Advised	MOPP 4 or as Advised
Persistency	Normally Persistent	G - Normally Nonpersistent; V- Normally persistent		
Detection	M8 Chemical Detector Paper; M256A1/M356A2 Kit; CAM in H Mode; M9 Paper	CAM in G Mode, M8 Chemical Detector Paper; M256A1/M256A2 Kits; M9 Paper; M8A1 Alarm	M256A2 Kit	M256A2 Kit
Rate of Action	HD, HT, HN Delayed. HL, L, PD, ED, MD, CX Immediate Irriation	G - Very Rapid V-Moderately Rapid	Delayed	Delayed and Rapid
Exposure Symptoms	Irritates Eyes and Skin. Produces Same Damage as heat burn. Blisters skin.	Running Nose, Tightness in Chest, Dimness of vision; and Pinpointing of Pupils, Difficulity in Breathing, Excessive Sweating, Nausea, Jerking and Twitching, Cessation of Breathing		
CAM Bar Reading	H Mode: 0 Bar = No Vapor, 0-3 Bars = Low Vapor, 4-6 Bars = High Vapor, 7-8 Bars = Very High Vapor	G Mode: 0 Bar = No Vapor, 0-3 Bars = Low Vapor, 4-6 Bars = High Vapor, 7-8 Bars = Very High Vapor		
Personnel Decon	Eyes: Flush with Water; Skin: M258A1 or M291 Kit	Eyes: Flush with cold water; Skin: Soap and Water or M258A1 kit or M291 Kit	M258A1 Kit, M291 Kit for Skin	M258A1 Kit, M291 Kit for Skin
First-aid	Seek Medial Aid. Keep Affectd Area Clean	Mark I Kit, Artifical Respiration as Rrequired. Seek Medical Aid	Seek Medical Aid	Seek Medical Aid

MOPP Analysis

- What is the mission?
- What is the weather?
- What is the work rate?
- What is the possibility of heat stress?
- How much time will the work require?
- How much degradation will occur?
- Is the unit targeted?
- What is the warning time?
- What additional protection is available
- What are the training and physical levels?
- Is it day or night?

MOPP Equipment	MOPP Level				
	Zero	1	2	3	4
Mask	Carried	Carried	Carried	Worn	Worn
Overgarment	Available	Worn	Worn	Worn	Worn
Overboots	Available	Carried	Worn	Worn	Worn
Gloves	Available	Carried	Carried	Carried	Worn

*In hot weather, the coat or hood can be left open for ventilation

Mask Only: For Soldiers protected from direct skin exposure to liquid or solid. If blister agent is present, DO NOT use Mask-Only

Chemical Agent Monitor (CAM)
Put in Operation

Steps

1. Remove nozzle protective cap and place protective cap onto environmental cap
2. Place filtered nozzle standoff onto nozzle (do not touch nozzle with your gloves)
3. Insert nozzle in H end of confidence sample for one second
    - Verify at least 3 bars are displayed
    - Display should clear to 1 to 0 bars within 2 minutes
4. Check in H and G modes

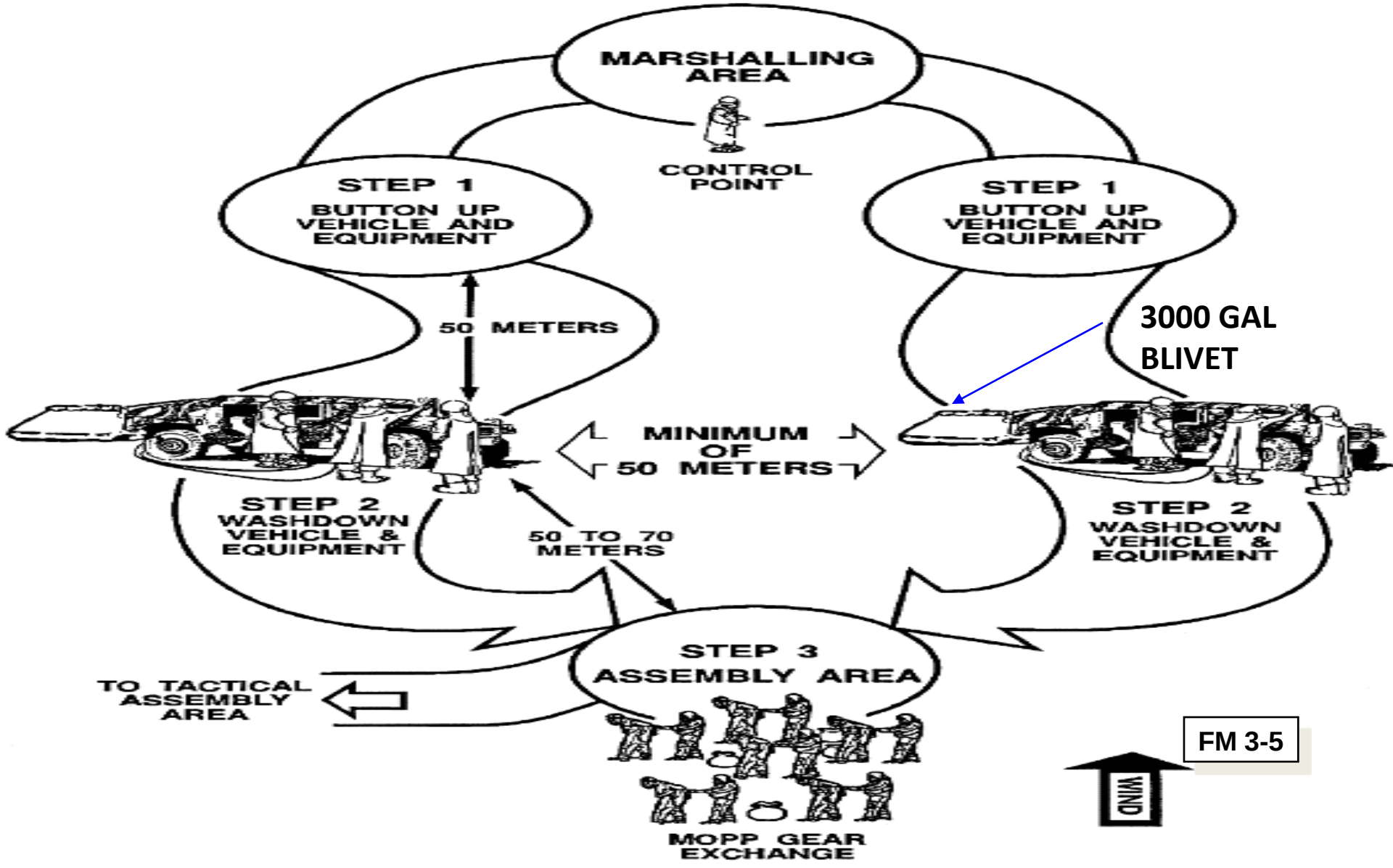
Operational Decontamination

Operational Decon Responsibility Matrix

Phase		*Task*	*Contaminated Unit*	*Battalion PDDE Team*	*Battalion*
PLANNING	Prep	Request	P		S
		Coordination			P
		Site Selection	P		S
		Rendezvous	P		S
		Site Setup	S	P	
	Execution	Control/Security	P	S	
		Processing	P	S	
	Site Clearance	Cleanup		P	
		Marking & Rpt		P	

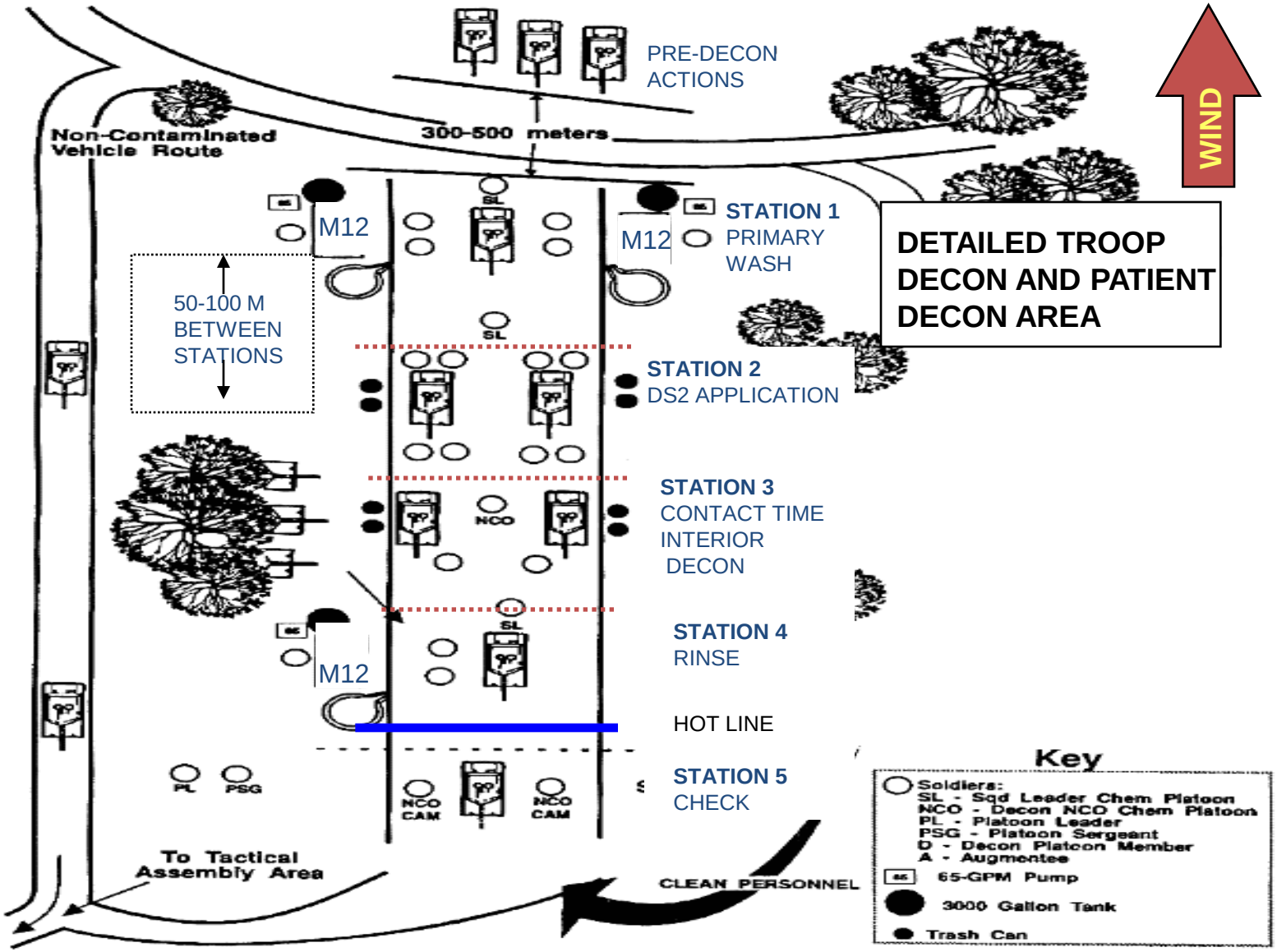
P=Primary responsibility, S=Secondary responsibility

OPERATIONAL DECON
UNSUPPORTED TWO LANE WASHDOWN



FM 3-5

THOROUGH DECON



FM 3-5

PROCESSING ACTIONS AT EPW PROCESSING AREA

Station	Purpose	Responsible Individuals*	Actions
Receiving Line			
1	Search	MP	Assign ISNs. Follow accountability procedures. Escort EPWs and their property. Strip-search EPWs (by MP of the same sex) before entering the processing area unless prohibited by conditions. Remove and examine property, place it in a container or a tray, mark it with a control number, and take it to a temporary storage area. (Some property may be returned in the processing line.) Supervise the movement of EPWs to the next station.
2	Personal hygiene	MP and processed EPWs (when possible)	Allow EPWs to shower, shave, and get haircuts. Disinfect EPWs using the guidelines established by the PVNTMED officer. Supervise the movement of EPWs to the next station.

*The number of people used to perform tasks depends on the number of EPWs and the amount of time available. Other soldiers assigned to the unit may perform non-MP-specific tasks if necessary.

PROCESSING ACTIONS AT EPW PROCESSING AREA

Station	Purpose	Responsible Individuals*	Actions
3	Medical evaluation	Medical personnel and MP	Inspect EPWs for signs of illness or injury. Evacuate EPWs who need treatment at a medical facility. Give immunizations or request immunization support from the supporting medical unit before internment or evacuation. Initiate treatment and immunization records. Place control numbers on medical records to reduce linguist support. (Names, service numbers, and ISNs are entered at Station 1 with the aid of an interpreter.) Annotate medical records with the date and place EPWs were inspected, immunized, and disinfected. Weigh EPWs and establish a weight register. Supervise the movement of EPWs to the next station.
4	Personal items	MP	Issue personal-comfort items (toilet paper, soap, toothbrush, and toothpaste). Issue clothing (clean and distinctive, like brightly colored jumpsuits if available) that is— • Taken from EPWs at Station 1. • Obtained from captured enemy supplies. • Obtained through normal supply channels. Ensure that clothing is marked "PW" as required. Escort EPWs to the processing area (Station 5).
Processing Line			
5	Administrative accountability	Processing clerk (assisted by an interpreter, MI, or others) and MP	Ensure that ISNs are assigned to EPWs. Note the capture tag numbers that ISNs are replacing so that late-arriving property can be matched to its owner. Initiate personnel records, ID documents, and property receipts. Use digital equipment to generate forms and records. Prepare forms and records to maintain the accountability of EPWs and their property (STANAG 2044). Prepare forms for repatriation or international transfer as specified in local regulations or SOPs. Supervise the movement of EPWs to the next station.

*The number of people used to perform tasks depends on the number of EPWs and the amount of time available. Other soldiers assigned to the unit may perform non-MP-specific tasks if necessary.

PROCESSING ACTIONS AT EPW PROCESSING AREA

Station	Purpose	Responsible Individuals*	Actions
6	Photography and fingerprinting	MP	Fingerprint EPWs. Identify and record the information on fingerprint cards. Take two photographs (with instant film or digital technology). Have EPWs look straight ahead, and fill the frame with their face. Use photograph name boards (black background with white characters). List ISNs and names (translated into English) at the bottom center. Attach one photograph to the EPW's personnel record. Give a completed, laminated ID card (which contains the second photograph) to the EPW. Supervise the movement of EPWs to the next station.
7	Personal property	MP	Inventory and record property (in the presence of EPWs) brought from temporary property storage areas. Make separate lists for returned, stored, impounded, and confiscated property. List property to be returned to EPWs or stored during internment on a separate list. Provide receipts for property placed in temporary storage. Provide receipts for money placed in EPW accounts (AR 190-8 and DFAS-IN 37-1). Return retained property that was taken from the EPW at Station 1. Supervise the movement of EPWs to the next station.
8	Records review	MP	Review processed records for completeness and accuracy. Escort EPWs back to processing stations to correct errors if necessary. Let EPWs prepare notification-of-capture cards. If being interned at the same place as processing, let EPWs prepare notification-of-address cards. If EPWs are unable to write their own cards, have someone authorized by the commander to do it for them. Prepare and maintain an accountability roster of all EPWs.
9	Accountability transfer	MP	Sign for and take custody of EPWs (can use movement manifest), their records, and their impounded property if moving to another facility. Evacuate or ship impounded property separately according to JTRs.

*The number of people used to perform tasks depends on the number of EPWs and the amount of time available. Other soldiers assigned to the unit may perform non-MP-specific tasks if necessary.

Air-Ground Integration Smart Card

General Comments

- Aviation assets have limited station time: use your aviation efficiently
- Task organize aviation assets as a maneuver element.
- Maintain communication with aviation units as other maneuver elements.
- Give specific tasks, purposes
- Weapons systems can cause collateral damage.
- Weapon systems cannot differentiate between friendly and hostel personnel
- Plan should not be dependent upon aviation
- Plan for aviation on all missions

Aviation Missions

- Security (area, screen, air assault)
- Attack (hasty, deliberate, shaping, decisive, close combat attacks (CCA))
- Reconnaissance (zone, area, route)
- Defend

Aviation Tactical Tasks

- Destroy
- Neutralize
- Delay
- Block
- Defeat

Employment

- Direct fire
- Observation
- Reconnaissance (area, route, zone)
- Security

Operational Graphics

- Attack by Fire (ABF)
- Support by Fire (SBF)
- Battle Position (BP)
- Observation Post (OP)

Communications

- Use command (CMD) net maintain communication with air mission commander (AMC) on the CMD net
- Ensure you have primary, alternated (single channel frequency), and contingency communications
- Other aircraft may monitor alternate frequencies (fires, platoons, operations, and intelligence
- Use plain simple language
- Rehearse with crews if possible

Check-In Brief

Aircraft check-in

- Unit/call sign
- Number and type of aircraft
- Ordnance on board/laser code
- Current location/ETA
- Time on station
- Task/purpose
- ABF/BP

Supported Units Attack Brief:

- Unit identification
- Target description
- Target location
- Type of mark/laser code
- Location of friendly forces and unit markings
- Proposed ABF/BP (include direction of fire)
- Fire support(include direction of fire, clearance of fires)
- SITREP (not limited to ADA systems
- Support unit attack helicopter contact measures/anti-fratricide measures

Clearance of Fires

- Establish communications with aircraft
- Ensure task/purpose is known
- Know subordinate unit locations
- Pass information as per check-in brief
- Ensure ROE criteria is met

Marking Techniques

Day

- VS17 Panel
- Smoke
- Star cluster
- Signal mirror
- Reverse polarity paper/panel
- Laser designator
- Combat identification panel
- Tracers
- Night
- Infrared (IR) strobe (if aircrew has goggles)
- Spotlight
- Chem Stick on a string
- IR spot light
- IR laser pointer
- Laser designator
- Combat identification panel
- Tracer fire

Rotary Wing Call for Fire

Aircraft Standard Check-In

Aircraft transmits to ground element on initial contact

-Number of aircraft in flight
-Weapons / Ammo available (total between both aircraft)
-Approximate Time on Station (in hours and minutes)
-Request a Situational Report

Example: Dog Six, this is Anninilator One Two, flight of two Kiowas, 1000 rounds of Fift Cal and 14 HE Rocketts. 1 hour, 30 minutes tiem on station, Request SITREP, Over.

Area of Operations Update

Ground element transmits to Aircraft

- General Enemy Sitiation
-Threat Activity
-General Friendly Situation
-Friendly Artilery Activity
-Remarks: Locaited SEAD efforts (supression, EW) Hazards (WX/Terrain)

Call-for-Fire

If requesting a CCA, the ground elements call-for-fire (one transmission) will include:

-Warning Order
-Friendly position and type of mark
-Direction from friendly location to the target (in degrees, phonetically)
-Distance from friendly location to the target (in meters)
-Target descritpion
-How friendlies will mark the target

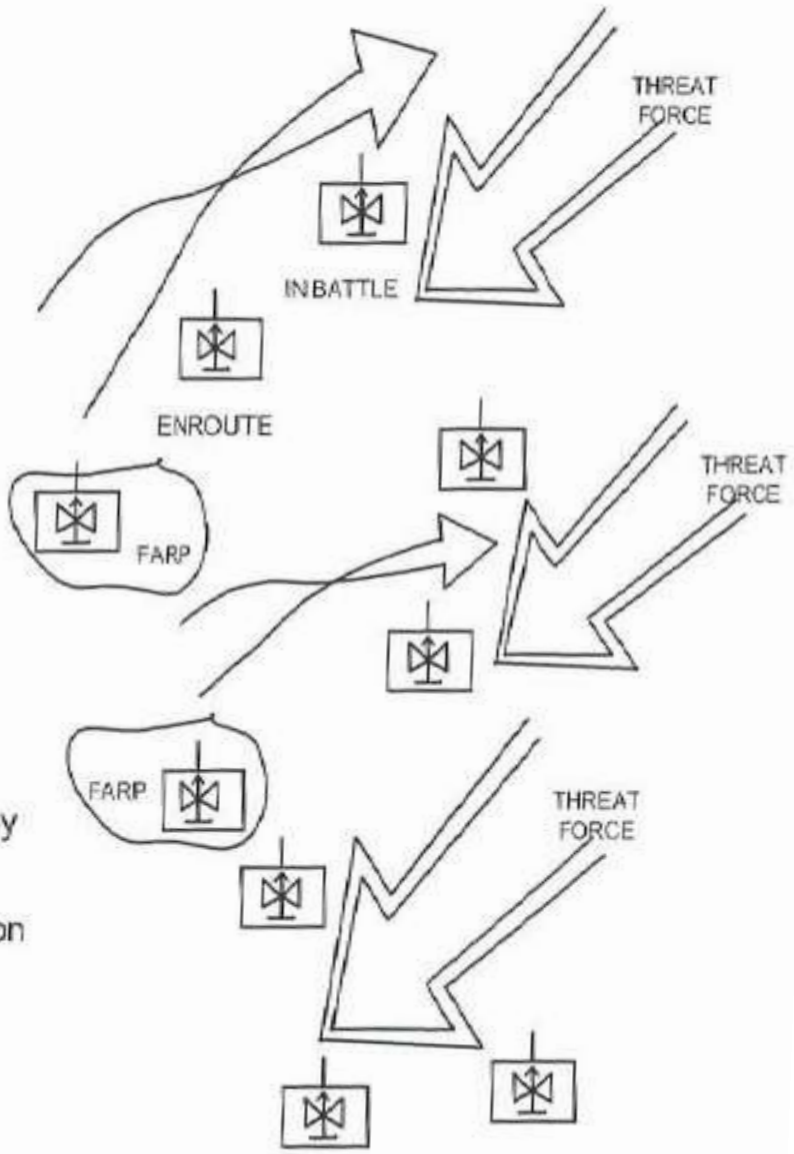
Example of mission request:

"Annuhilator one two, this is Dog six, Fire mission"
"From my position, marked by VS-17 panel"
"One three five degrees"
"900 meters"
"One BMP by a two-story building"
"Marked by tracer, over"

Friendly Marking		Target Marking	
Day		Day	
	VS-17 Panel		Tracer or Organic Fires
	Smoke		Smoke
	Mirror		Use of Landmark
Night		Night	
	IR Strobe		Tracer or Organic Fires
	Buzz Saw		IR Laser (preferred)
	Revers Polanty/Thermal		
	IR Laser "lasso		

ATTACK HELICOPTER BN EMPLOYMENT TECHNIQUES

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



OH-58A/C	"Kiowa"
Overall Height:	9' 7"
Overall Length Rotors Turning:	40' 11.8"
Rotor Span:	35' 4"
Engine:	T-63-A-700(A) T-63-A 720(C)
Shaft Horsepower:	317(A)(C)*
Maximum Airspeed:	120 Knots
Maximum Gross Weight:	3000 Lbs(A) 3200 Lbs(C)

CH-47D	"Chinook"
Overall Height:	18' 11"
Overall Length Rotors Turning:	98' 10.7"
Rotor Span:	60' Each
Engine:	T-55-GA-714A**
Shaft Horsepower:	4867** Each
Maximum Airspeed:	170 Knots
Maximum Gross Weight:	50,000 Lbs

UH-60A	"Blackhawk"
Overall Height:	12' 4"
Overall Length Rotors Turning:	64' 10"
Rotor Span:	53' 8"
Engine:	T-700-GE-701C
Shaft Horsepower:	1700 Each
Maximum Airspeed:	159** Knots
Maximum Gross Weight:	20,250 Lbs

Army Aircraft Endurance Rates		
Type	Endurance	Combat Radius
AH-1S	2.0 HRS	280 KM
AH-64A (Apache	2.5 HRS	325 KM
UH-1	2.2 HRS	200 KM
UH-60 (Blackhawk)	2.2 HRS	280 KM
UH-47D	2.0 HRS	100 KM

OH-58D	"Kiowa Warrior"
Overall Height:	12' 10.6"
Overall Length Rotors Turning:	40' 6.4"
Rotor Span:	35'
Engine:	T-703-AD-700
Shaft Horsepower:	650
Maximum Airspeed:	125 Knots
Maximum Gross Weight:	4500 Lbs

UH-1H/V	"Huey"
Overall Height:	13' 7"
Overall Length Rotors Turning:	57' .67"
Rotor Span:	48' 3.2"
Engine:	T-53-L-13
Shaft Horsepower:	1400
Maximum Airspeed:	124 Knots
Maximum Gross Weight:	9500 Lbs

AH - 1G	"Cobra"
Overall Height:	13' 9.5"
Overall Length Rotors Turning:	53' 11"
Rotor Span:	44'
Engine:	T-53-L-13
Shaft Horsepower:	1400
Maximum Airspeed:	190 Knots
Maximum Gross Weight:	9500 Lbs

MQ-1 Predator

- Advantages
  - Long loiter time
  - Multiple sensors
  - Imagery links to numerous sources
- Disadvantages
  - Slow
  - Limited field-of-view (FOV)
  - Dependant on communication links to operate
  - Limited numbers
  - Weather effects
- Missions: ISR, CAS
- Armament: ~ 450 lb
  - AGM-114 Hellfire
  - Highly accurate delivery
- Typical CAS load out
  - 2 × AGM-114
- Performance
  - Speed: 70 knots to 90 knots
  - Combat radius: Intercontinental
  - Time on station: 16 h to 20 h
- Airspace considerations
  - Max altitude 25 000 ft MSL
  - Typically holding within 5 NM to 7 NM of target, 10 000 ft to 15 000 ft
- Communications
  - Ability to chat via SIPR
  - 1 × UHF
  - Secure but no HQ
- Equipment: Full-motion video (FMV)
- Target ID: Multispectral targeting system
  - LRD: laser range designator
  - IR pointer
  - IR / EO optics

MQ-9 Reaper

- Advantages
  - Long loiter time
  - Multiple sensors
  - Imagery links to numerous sources
  - Laser guided / IAM

Disadvantages

- Slow
- Limited FOV
- Dependant on communication links to operate
- Limited numbers
- Weather effects

- Missions
  - Primary: CAS
  - Secondary: ISR
- Armament: up to 3000 lb
  - GBU-12, GBU-38, and AGM-114 Hellfire missiles
- Typical CAS load out
  - 2 × GBU-12, 4 x AGM-114
- Performance
  - Speed: 160 knots to 230 knots
  - Combat radius: Intercontinental
  - Time on station: 15 h to 20 h
- Airspace considerations
  - Max altitude 50 000 ft MSL
  - Normally employed in the standard fighter blocks
- Communications
  - Ability to chat via SIPR
  - 1 × UHF
  - Secure but no HQ
- Equipment: FMV

F-15E Strike Eagle

- Advantages
  - Two crewmembers
  - Targeting pod
  - Large payload
  - Data link capability
  - Loiter time
- Disadvantages
  - Not a primary CAS platform
  - Visually easy to see during day
- Missions
  - Primary: AI
  - Secondary: Counterair, CAS
- Armament: Up to 24 500 lb
  - Mk-82, -84
  - Laser guided and EO (GBU-10, -12, -15, -24, -28)
  - JDAM (GBU-31, -38), JASSM
  - CBU-87, -89, -103, -104, -105
  - Small diameter bomb
  - AGM-130
  - 20 mm cannon
- Typical CAS load out
  - 9 x GBU-12
  - 4 X GBU-12 and 2 x GBU-31
  - 510 rounds 20 mm HEI
- Performance
  - Speed: 480 knots to 540 knots (mach 2.3 max)
  - Combat radius: 500 NM to 700 NM
  - Time on station: 30 min to 90 min , threat and weather dependent
- Communications: 2 x UHF, 2 x VHF, SINCGARS, SATCOM
- Equipment : Sniper, Link-16, Fighter Data Link (FDL)

F-16C Fighting Falcon

- Advantages
  - Targeting pod
  - Visual detection
  - FAC(A) platform
- Disadvantages
  - Time on station
  - Varied capes and missions
  - Limited payload
- Armament: Up to 9500 lb
  - Mk-82, -84
  - Laser guided (GBU-10, -12)
  - JDAM (GBU-31/38/54), JASSM
  - CBU-87, -89, -103, -105
  - AGM-65/A-E
  - 20 mm cannon
- Typical CAS load out
  - LGB, CSW, CBU, AGM – Flexible
  - 500 rounds 20 mm HEI
- Performance (Combat Load)
  - Speed: 430 knots to 550 knots (mach 1.6 maximum)
  - Combat radius: Over 300 NM
  - TOS: 30 min to 45 min
- Communications
  - 1 x UHF
  - 1 x ARC-210
  - HQ / SECURE / FM / UHF / VHF
- Equipment
  - LITENING AT, Sniper
  - CM – Link-16, Blk-30 SADL

A/OA-10 Thunderbolt II

- Advantages
  - Highly trained CAS pilots
  - Survivability
  - Loiter time
  - Robust comm setup
  - FAC(A) platform
  - Varied and large ordnance loads
- Disadvantages
  - Limited thrust
- Missions
  - Primary: CAS, FAC(A)
  - Secondary: CSAR, AI
- Armament: Up to 16 000 lb
  - 30 mm Gatling gun
  - AGM-65 Maverick
  - Mk-82, -84
  - GBU-10, -12
  - GBU-38
  - CBU-87, -89
  - 2.75-inch rockets (HEI, WP)
- Typical CAS load out
  - Mix of Mk-82 and GBU-12 for up to 6 total
  - 4 x CBU-87
  - 14 x 2.75 inch rockets (HE / WP)
  - 1150 rounds (combat mix / HEI)
  - 2 x AGM-65 D / G / H / K
- Performance
  - Speed: 300 knots to 375 knots (420 knots maximum)
  - Combat radius: Over 300 NM
  - Time on station: 30 min to 90 min, threat and weather dependent
- Communications
  - 1 x UHF, 1 x VHF-AM, 1 x VHF-FM, SATCOM

B-1B Lancer

- Advantages
  - Long loiter time
  - Large weapon load
  - SAR plus Sniper
- Disadvantages
  - Cannot drop visually
  - Not a primary CAS platform
  - Coordinate dependent bomber
- Missions
  - Primary: Strategic attack, AI
  - Secondary: CAS, counter sea
- Armament: up to 48 000 lb
  - JDAM, JASSM, WCMD, Mk-series, CBU
- Typical CAS load out
  - 8 x GBU-31, 12 x GBU-38
  - 24 × GBU-31
  - 15 x GBU-38
  - 30 × CBU-103
- Performance
  - Speed: 420 knots to 540 knots
  - Combat radius: Intercontinental
  - Time on station: 2 h to 4 h
- Communications
  - 1 × UHF
  - 1 × UHF / VHF (AM or FM)
  - 1 × SATCOM (shared antenna)
  - 1 × HF
- Equipment
  - SAR
  - Sniper
  - FalconView on laptop to plot friendly positions / give SA

AH-64D Apache

Missions

- Attack
  - Hasty / Deliberate, Spoiling / Counter, Raid / Feint, Demonstration
- Reconnaissance
  - Zone, Area, Route
- Security
  - Screen, Guard, Cover, Air assault security
- Performance:
  - Speed (Cruise Max): 110 knots to 193 knots
  - Endurance: Approx 2 +15 hr
- Armament:
  - 2.75 inch rockets
  - Hellfire missiles
  - 30 mm cannon
- Target acquisition:
  - PNVS
  - TADS / MTADS (LRFD / LST)
  - FCR / RFI

OH-58D Kiowa Warrior

Missions

- Reconnaissance
- Security
- Attack
- Command, control, computer, communications and intelligence (C4I) enhancement
- Aerial adjustment of artillery
- Surveillance
- Laser designation
- Limited attack missions
- Performance:
  - Speed (Cruise – Max): 90 knots to 120 knots
  - Endurance: Approx 2 hr
- Armament:
  - 2.75 inch rockets
  - Hellfire missiles
  - .50 cal MG
  - Air-to-air Stinger
- Target acquisition:
  - Thermal imaging
  - Low light TV
  - Laser designation (No LST)

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

EVALUATING ADA PRIORITIES

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

VULNERABILITY - MEASUREMENT OF SUSCEPTIBILITY 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 TO 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 ACTIONS AND UNITY OF EFFORT WHICH MAXIMIZES OPERATIONAL EFFECTIVENESS.

AIR DEFENSE EMPLOYMENT GUIDELINES

MUTUAL SUPPORT - DIVE SU 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.

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 5TM/SEC 2 SEC/PLT	6 MSLS/TM 4 WPNS RDS 2 MSL RDS	VISUAL	4 KM +	3 KM +	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
			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

AIR ASSAULT

AIR ASSAULT OPERATIONS ARE THOSE IN WHICH ASSAULT FORCES (C, CS, CSS) USING THE FIREPOWER, MOBILITY, AND TOTAL INTEGRATION OF HELICOPTER ASSETS, MANEUVER ON THE BATTLEFIELD UNDER THE CONTROL OF THE GROUND OR AIR MANEUVER COMMANDER TO ENGAGE AND DESTROY ENEMY FORCES OR SEIZE AND HOLD KEY TERRAIN. FM 90-4,

AIR ASSAULT TASK FORCE KEY PERSONNEL

* AIR ASSAULT TASK FORCE COMMANDER (AATFC)
* AIR MISSION COMMANDER (AMC)
* AVIATION LNO
* AIR ASSAULT TASK FORCE STAFF (AATF STAFF)

PRINCIPLES OF EMPLOYMENT

* ASSIGNED MISSIONS THAT TAKE ADVANTAGE OF SUPERIOR MOBILITY
* ALWAYS FIGHT AS A COMBINED ARMS TEAM
* AVAILABILITY OF AVN ASSETS IS CRITICAL
* PLANNING MUST BE CENTRALIZED AND PRECISE; EXECUTION IS DECENTRALIZED
* MAY BE CONDUCTED AT NIGHT OR IN ADVERSE WEATHER
* UNIT TACTICAL INTEGRITY MUST BE MAINTAINED
* FIRE SUPPORT FOR FLIGHT ROUTES AND LZ AREAS

5 PHASES OF THE AIR ASSAULT

* GROUND TACTICAL PLAN
* LANDING PLAN
* AIR MOVEMENT PLAN
* LOADING PLAN
* STAGING PLAN

Roles and Responsibilities

AIR ASSAULT TASK FORCE COMMANDER

INFANTRY BDE/BN CDR

- NORMALLY FIGHTS FROM C2 A/C
- PLANS, SYNCHS AND C2s THE MSN
- PROVIDES UNITY OF CMD

AIR MISSION COMMANDER

ASSAULT HELICOPTER UNIT

- CMDs ALL ASSAULT A/C
- CO-LOCATES W/ AATFC

GND TACTICAL COMMANDER

INFANTRY UNIT

- FIGHTS THE MANEUVER PLAN AFTER ASSAULT
- ASSUMES CONTROL OF ATK A/C FOR CLOSE FIGHT (METT-T)

AIR BATTLE CAPTAIN

ATTACK HELICOPTER UNIT

- CMDs ALL ATTACK A/C
- OPERATES FROM OWN C2 A/C
- CONTROLS SPTING FIRES (FA/CAS)

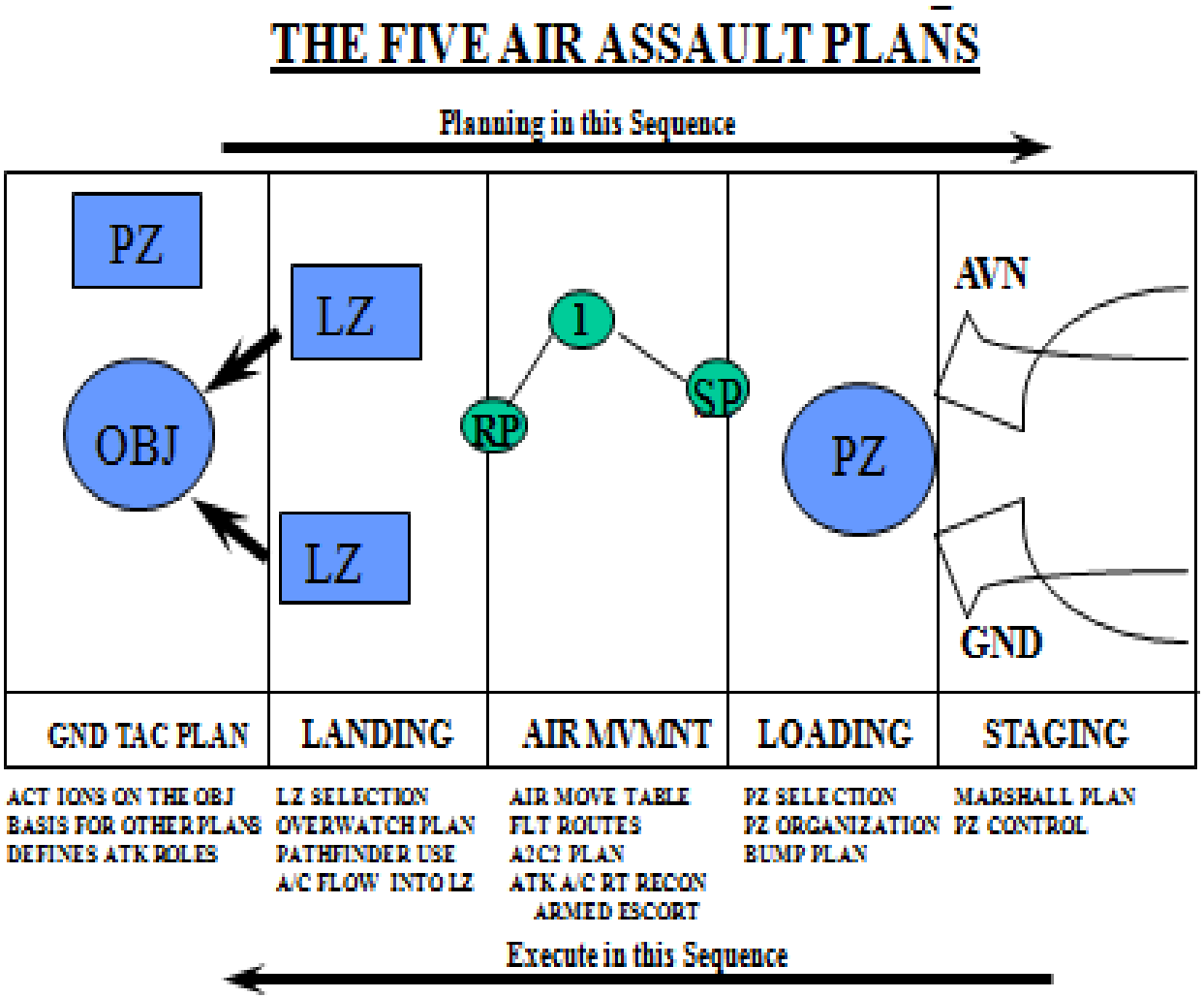
AIR MOVEMENT OPERATIONS ARE THOSE OPERATIONS DESIGNED TO MOVE SUPPLIES, EQUIPMENT, AND PERSONNEL. AIR MOVEMENT OPERATIONS ARE NOT CONDUCTED IN DIRECT CONTACT WITH THE ENEMY, AND MAY NOT INCLUDE OTHER MEMBERS OF THE COMBINED ARMS TEAM. FM 1-113, PAGE 3-1

Air Assault Planning

" The Ground Tactical Plan drives the Air Assault. It is the first step in an integrated backward planning process."

The Five Plans tie together in this way:

- The *Ground Tactical Plan* relates to LZ selection.
- LZ selection creates the *Landing Plan*.
- The LZ location directs the *Air Movement Plan*.
- The flight routes and current friendly locations dictate the *Loading Plan* and PZ locations.
- The PZ loading plan designates the requirements that become the *Staging Plan.*



Air Assault Planning

Nine Planning Steps

1. Parallel Planning - *ID Avn Resources, allocate serials by assault, ID PZs and LZs, ID number of required turns, ID composition of assaults*
2. Air Movement Annex - *Lift and Serial Composition, PZs and LZs, Air Routes, LZ Intelligence Products, Any deviations from SOP*
3. Air Mission Coordination Meeting (AMCM) - *Completes coord between Avn and Gnd Forces, , finalizes air movement and landing plan*
4. Air Mission Brief (AMB) - *Air Assault OPORD (Gnd and Air)*
5. The Aircrew Brief (ACB) - *Aviation focused Mission Order*
6. The Pilot/Serial Brief (P/SB) - *Crew Level Dissemination of the Plan*
7. Brigade Rehearsal - *Starts w/ GTP, then covers Landing and Air Movement Plan*
8. PZ Rehearsal - *Run by the BDE XO, covers Staging, Loading and Air Movement Plans*
9. The PZ Update Brief - *Final update to Key leaders on the Air Assault (Conditions Check)*

Setting the Conditions / Four Operations:

- Condition Checks
- MEDEVAC/CASEVAC Operations
- Attack Helicopter Operations
- Air Assault Artillery Operations

Conditions Checks

- A series of checks conducted by BOS at Division and Brigade Level *(standardized checklists, modified by METT-T)*
- Used to confirm SA on Enemy, Friendly, Terrain and Weather
- Results in a "GO", "NO GO" or a modification to the mission, allocation of resources, or timeline

PZ SELECTION CRITERIA

* NUMBER OF PZs
* SIZE OF PZs
* PROXIMITY OF TROOPS
* ACCESSIBILITY
* VULNERABILITY TO ATTACK AND OBSERVATION
* PREPARATION

LZ SELECTION CRITERIA

• LOCATION
•CAPACITY
•ALTERNATE LZs
•ENEMY DISPOSITION AND CAPABILITIES
•COVER AND CONCEALMENT
• OBSTACLES
• IDENTIFICATION FROM THE AIR
•APPROACH AND DEPARTURE ROUTES
• WEATHER

FIRE SUPPORT PLANNING CRITERIA

* ESSENTIAL FIRE SUPPORT TASKS
* FIRE SUPPORT PLAN
  - SCHEME OF FIRES/SEAD PLAN
  - TARGET LIST
  - PRIORITY OF FIRES
  - TARGET PRIORITIES
  - ALLOCATION OF FS ASSETS
  - FIRE SPT COOR MEASURES
  - FIRING BATTERY LOCATIONS
* COOR WITH BDE FSE & COLTS
* WHO PLANS? WHO CONTROLS?

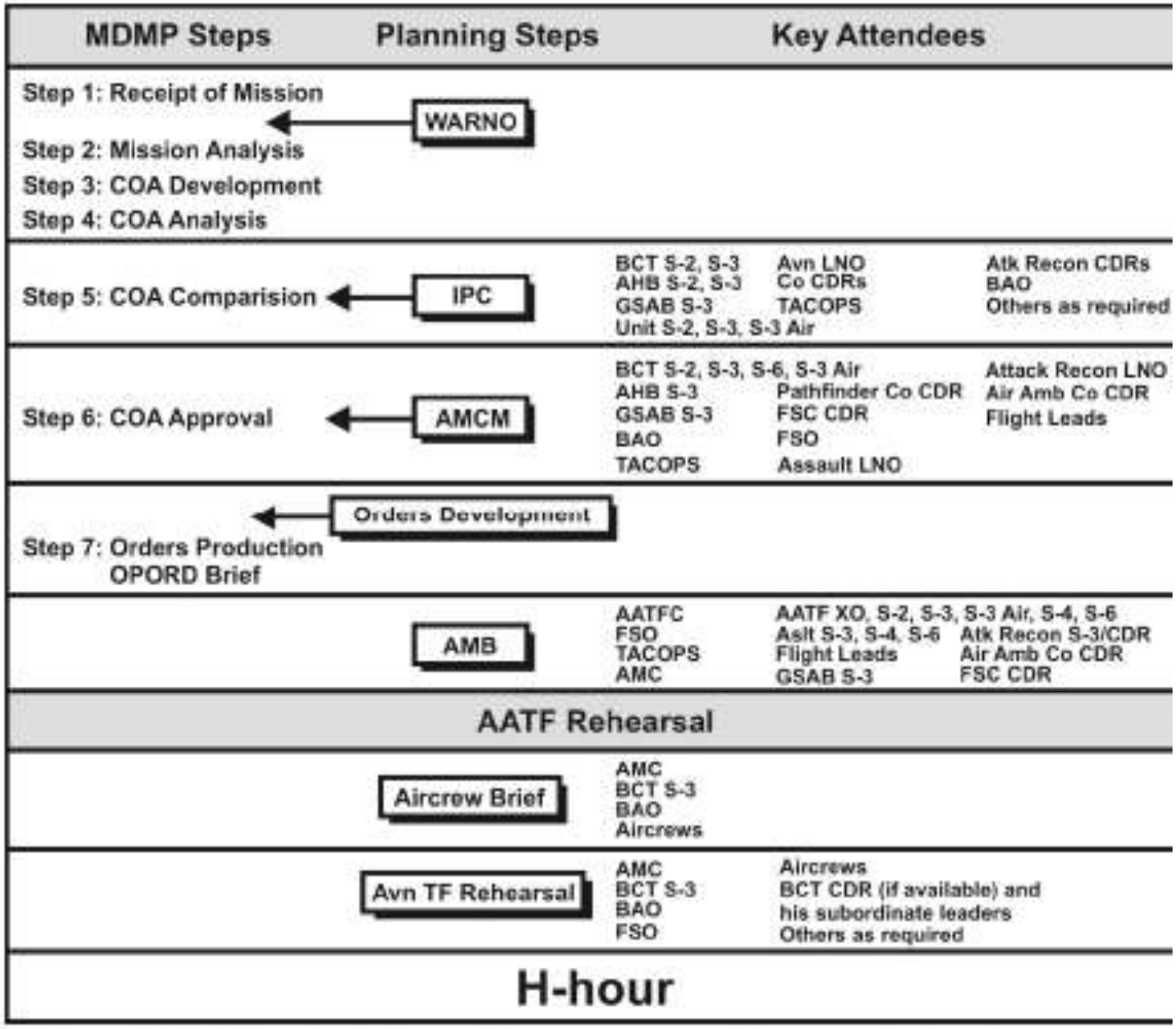


Figure 2-2. Military decision-making process and air assault planning process

HASTY AMC CHECKLIST

1. MISSION #:
2. SUPPORTED UNIT:
3. *SUPPORTING UNIT:* 4. TIME REQUIRED:
5. MISSION (AND CONCEPT SKETCH):
6. #/TYPE OF AIRCRAFT:
7. H-HOUR:
8. *PICK-UP TIME WITH REHEARSAL TIME BUILT IN:*
9. PZ LOCATION (AND SKETCH):
10. PZ FREQUENCY A. UNIT B. *AIRCRAFT*
11. PZ CALL SIGN A. UNIT B. *AIRCRAFT*
12. PZ MARKING (DAY/NIGHT)
13. LANDING HEADING
14. LANDING FORMATION
15. DOOR ENTRY
16. NUMBER OF TROOPS
17. NUMBER/TYPE CARGO LOADS
18. TAKE-OFF DIRECTION
19. TAKE-OFF FORMATION
20. FALSE LZ GRID
21. *ROUTE*
22. *TIME OF FLIGHT*
23. LZ GRID (ALT IF REQUIRED)
24. LZ SKETCHES:
25. LZ MARKING (DAY/NIGHT)/LZ FREQ and Call Sign (if Pathfinders are available)
26. ATTACK AVN CONCEPT
27. LZ PREP FIRES
28. LANDING HEADING
29. LANDING FORMATION
30. WEAPONS STATUS
31. DOOR EXIT
32. TAKE-OFF DIRECTION
33. NUMBER OF TURNS REQUIRED
34. ABORT CRITERIA
35. WEATHER CALL
36. BUMP PLAN
37. ABN FREQ
38. CAN/CMD FREQs

Air Mission Commander s Initials _____
Infantry Battalion S3 Initials_____

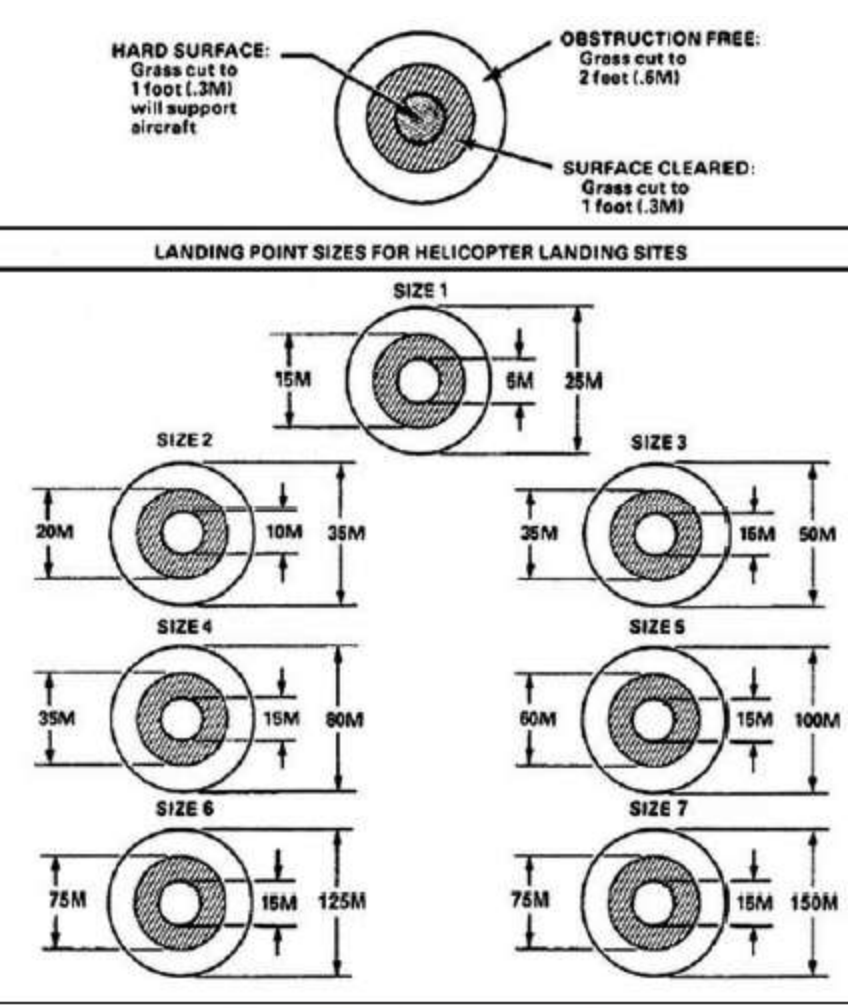
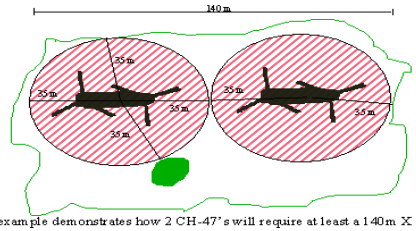


Figure 4-1. Landing point sizes.

Landing Point	Minimum Diameter Of Landing Point	Type Of Helicopter/Operation
Size 1	80 ft (25 m)	Light observation helicopters such as the OH-6 and OH-58D.
Size 2	125 ft (35 m)	Light utility and attack helicopters such as the UH-1H, H-65, and AH-1W.
Size 3	160 ft (50 m)	Medium utility and attack helicopters such as the UH-60, H-2, and AH-64.
Size 4	265 ft (80 m)	Cargo helicopters such as the CH-47, H-3 and CH-53, or with prior coordination
Size 5	328 ft (100 m)	Slingload helicopters and aircraft of an unknown origin.
Size 6	410 ft (125 m)	Slingload long-line operations.
Size 7	492 ft (1,505 m)	Slingload operations with night vision goggles (NVG).

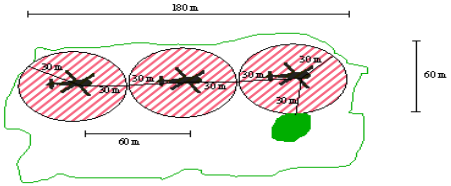
Table 4-1. Landing point uses.

CH-47 PZ/LZ Example



This example demonstrates how 2 CH-47's will require at least a 140m X 70m LZ/PZ (70m per CH47), regardless of the mission. These are minimum planning requirements; blowing dust, obstacles, or other hazards dictate larger PZ's/LZ's.

UH-60 PZ/LZ example



This example demonstrates how 3 UH-60's will require at least a 180mX60m LZ/PZ (60m per UH60), regardless of the mission. These are minimum planning requirements; blowing dust, obstacles, or other hazards dictate larger PZ's/LZ's.

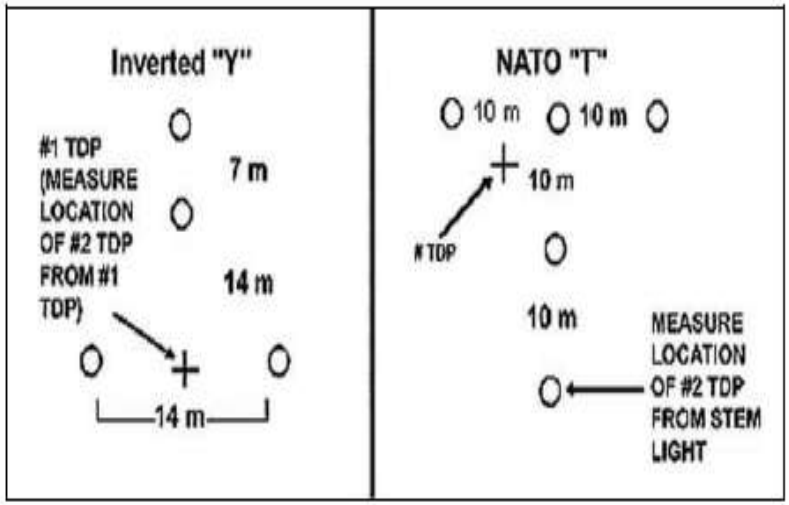
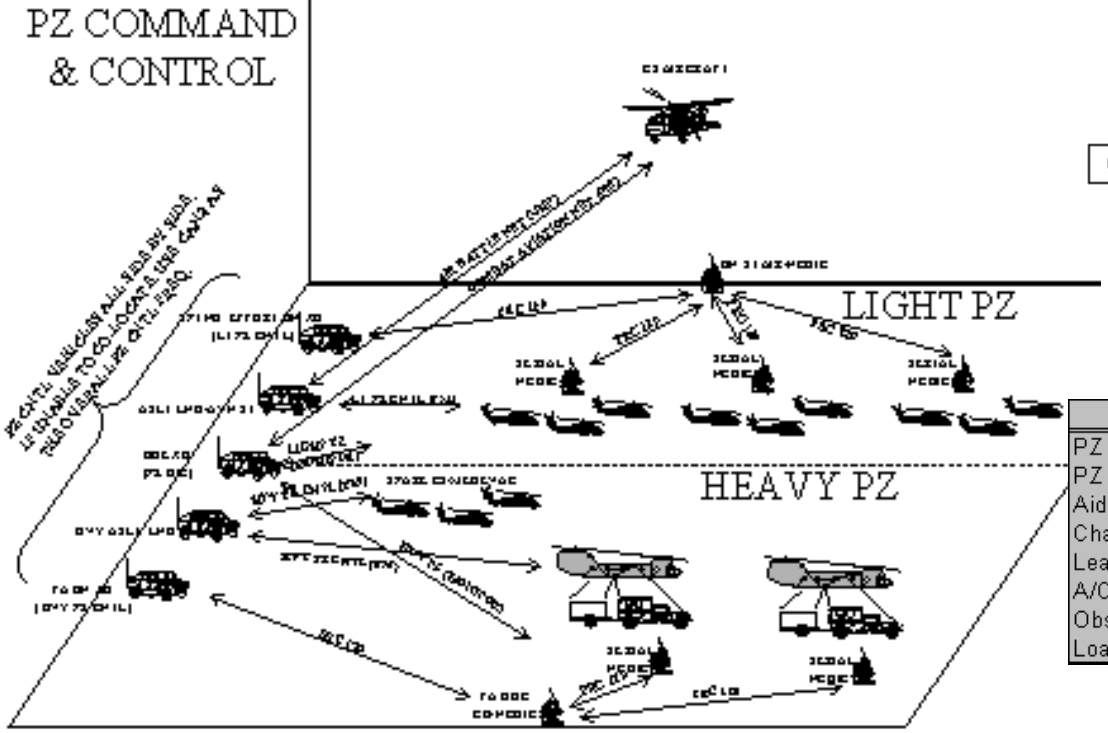
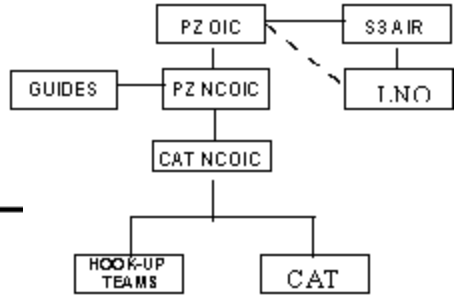


Figure 4-17. Placement of the inverted "Y" or NATO "T" at the number one touchdown point.

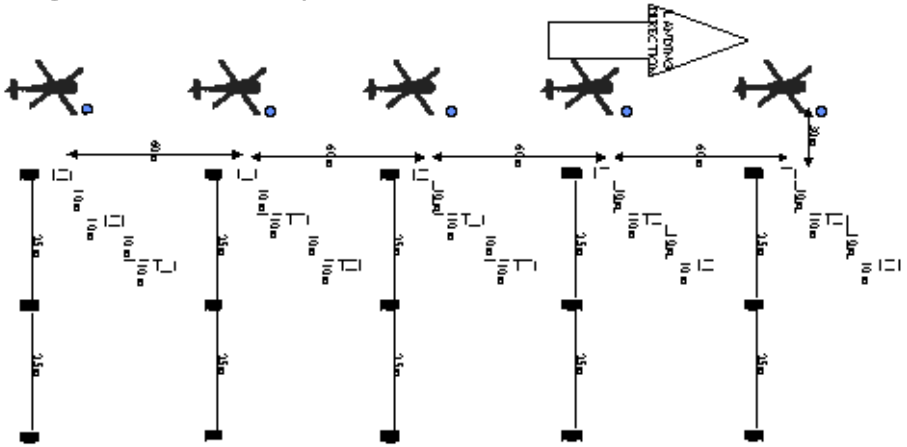


PZ CHAIN OF ACTION

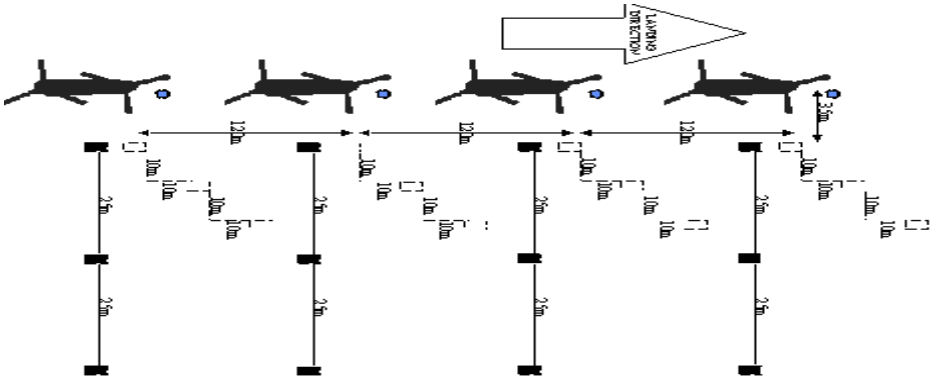


POSITION	DAY	NIGHT
PZ Entry	NCOIC/sign	NCOIC / 2 blue chem
PZ Control	M998 & VS17	2 green chem on antenna
Aid Station	M997	Steiner device
Chalk stage pts	Guides/sign	Guide/blue chem per chalk
Lead touchdown pts	VS17	Inverted Y / IR flashlight
A/C touchdown pts	soldier on knees/raised rifle	Red chem per aircraft
Obstacles	notify pilots on FM	Red chem ring around obs
Loads to be picked up	Hook-up tm on loads	Swinging IR chem per load

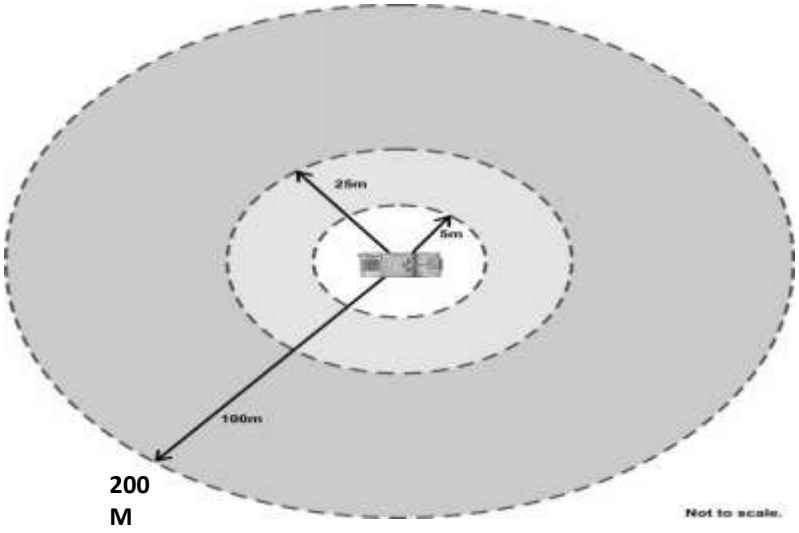
Light PZ Set up

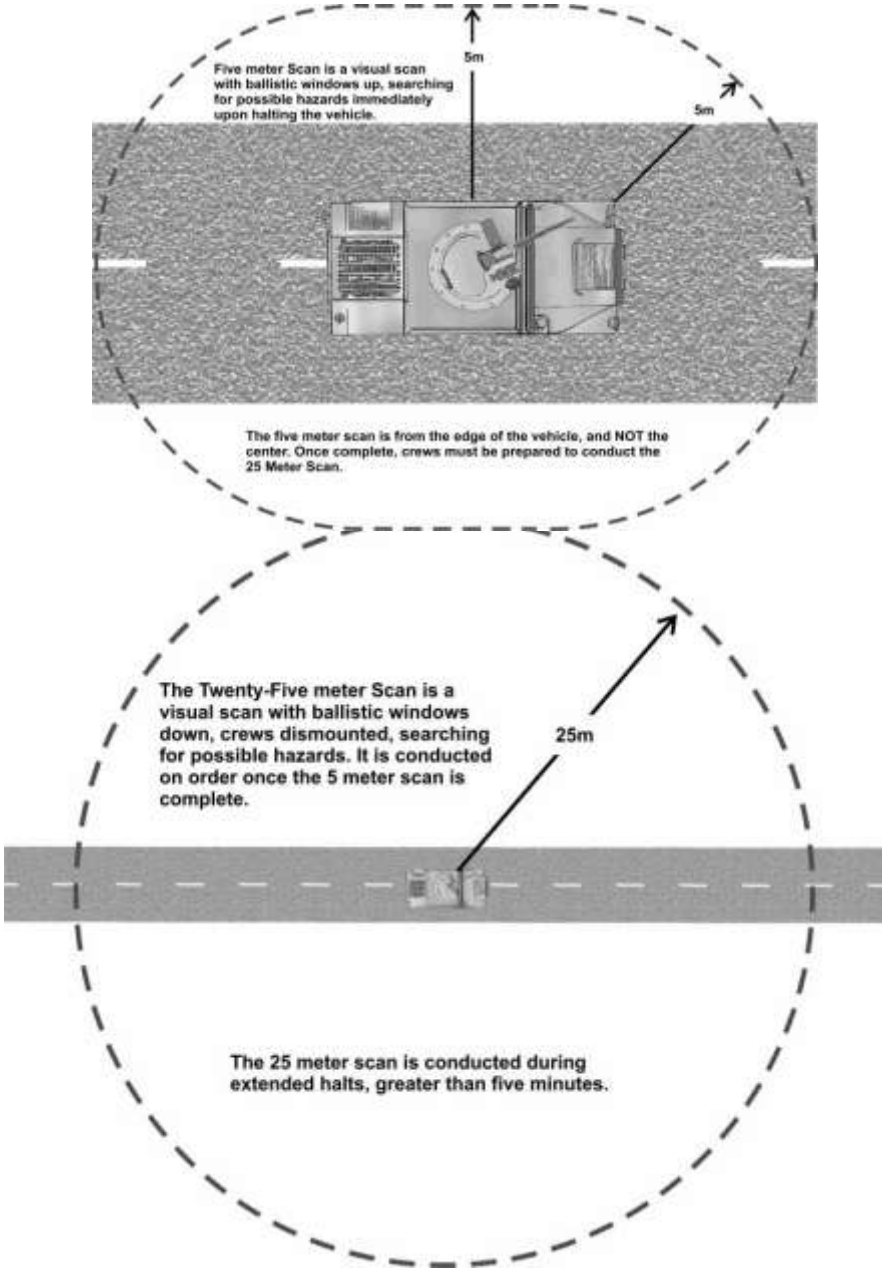


Heavy PZ Set up



5 / 25 / 200 drill



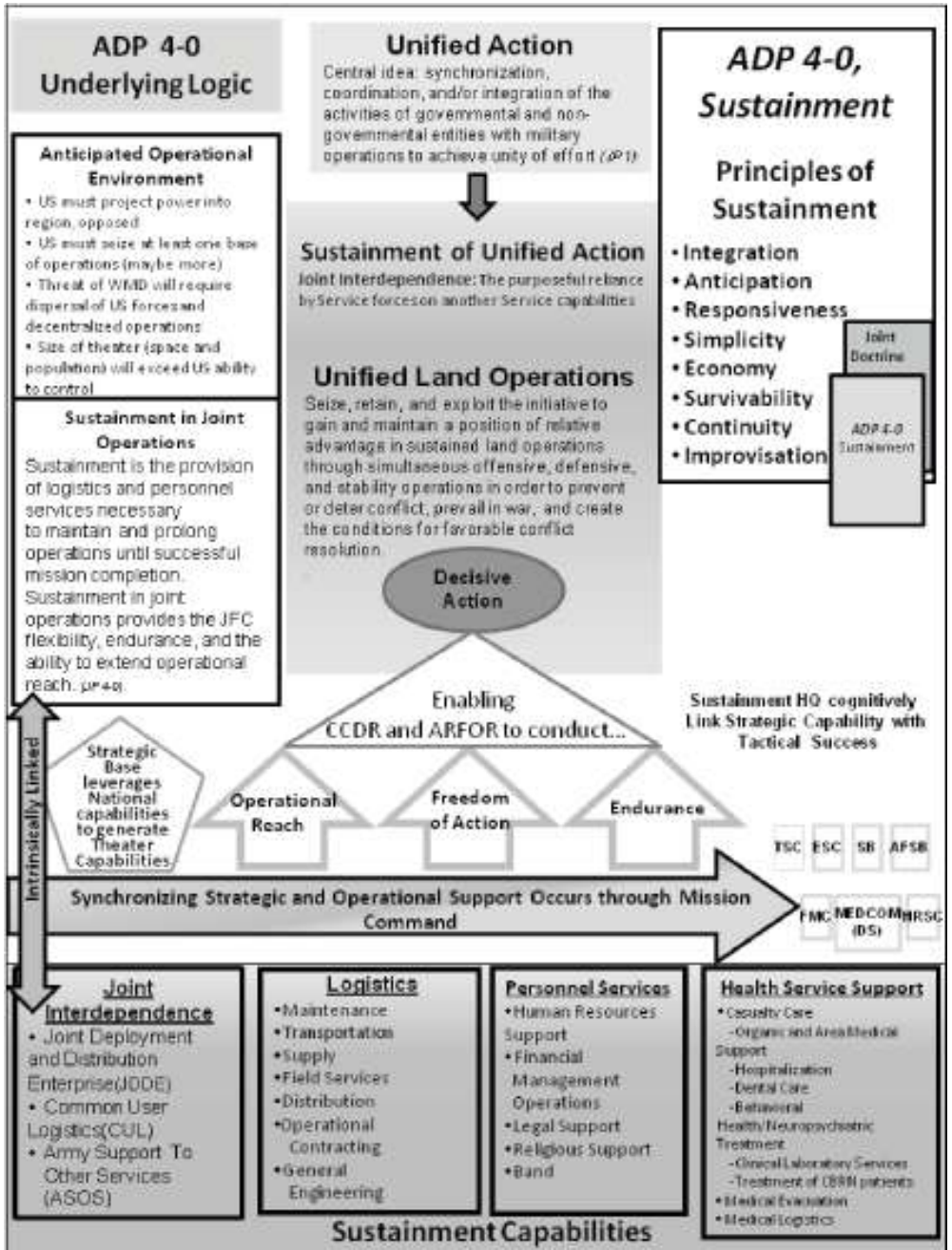


This drill begins with the vehicle coming to a halt. Regardless of how long the VGC thinks that the convoy will be stopped, they need to immediately begin to check around the vehicle. This entire drill is a visual sweep and does not require anyone to dismount the vehicle.

 Five Meter Checks. The driver will identify a position to halt. Each member of the vehicle crew will carry out a visual check within a five meter radius, collectively covering 360 degrees around the vehicle. The crew should look for disturbed earth, suspicious objects, loose bricks in walls, and security ties on streetlights. During the check, Soldiers should work from the ground up and continue above head height. The gunner will then conduct a more thorough check, being very systematic and using a high powered, white flashlight or spot light during limited visibility conditions.

 25 Meter Check. Once five meter checks have been conducted, the crew will continue scanning 7084 out to twenty-five meters. Using a bright, white light flashlight or spot light, the gunner will 7085 systematically scan out to twenty five meters, covering 360 degrees around the vehicle and 7086 check for potential IED indicators and anything out of the ordinary.

SUSTAINMENT



Logistics consists of the following:

- Maintenance (ATTP 4-33).
- Transportation (FM 55-1).
- Supply (FM 10-1).
- Field services (FM 10-1).
- Distribution (ATTP 4-0.1).
- Operational contract support (ATTP 4-10).
- General engineering support (FM 3-34).

Sustainment Mission Analysis Results

1. **CSS Products in terms of:**
   a**. Fixing**: OR rate maintenance repair timelines, maintenance support team and recover / assets available
   b. **Fueling**: Current status (in vehicles and bulk carriers/storage anticipated requirements enroute requirement, refuel assets, systems capabilities, fuel allocations and significant risk)
   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 org) and replacement from non-organic sources.

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-government organizations (i.e. red cross, red crescent, doctors without borders.)
   c. Availability of medial evacuation assets to include air.

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.

Sustainment 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:
- What is the RECON CASEVAC plan?
- High casualty and evacuation requirement.
- Jump aid station. Consider BN AXPs.
- How far forward can MEDEVAC fly?

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 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 maintenance personnel forward.

Medical:
- What is the MEDEVAC Plan for deep fight assets
- Well coordinated evacuation plan.

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

ROAD MARCH PLANNING FACTORS

Movement formulas are applied to known distance, rate, and time data to derive information necessary to prepare a time schedule. The time schedule is used to regulate departures and arrivals of march elements. *a. Time and distance relationships. Relationships between time and distance are the basis for* march planning. The planner determines how far the column is to travel (distance) and how long it will take to make the move (time). He must also know the space (the length of the column) the column will occupy on the route and the distance (gap) that separates march elements. Each term used for distance has its corresponding term for time. The length of the column in kilometers has an equivalent pass time in minutes.

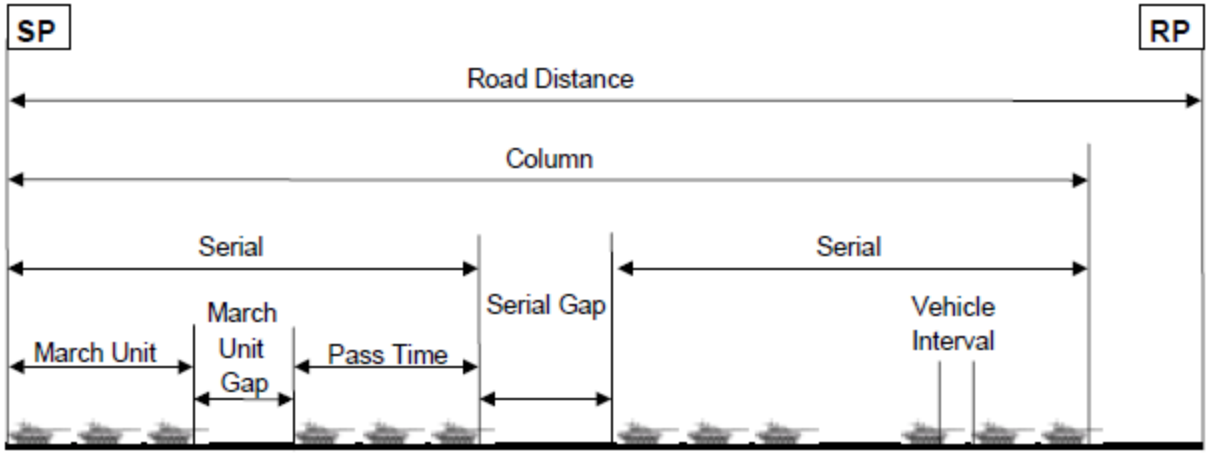


Figure 10-1. Time-distance

Terms.
(1) *March column--elements using the same route for a single movement under control of a*
single commander.
(2) *Serial--a major subdivision of a march column. Usually a battalion-sized unit. Usually 2 to*
20 march units.
(3) *March unit--a major subdivision of a serial. Usually a company-sized unit. Usually 10 to*
24 vehicles.
(4) *Arrival time--head of column reaches the start point (SP).*
(5) *Clearance time--tail of column reaches the release point (RP).*
(6) *Pass time (PST)—time between when the first vehicle passes a given point and when the last*
vehicle passes the same point.
(7) *Vehicle interval--space between two vehicles (km).*
(8) *March unit gap (MUG)—gap between the rear of one march unit and the front of the next*
march unit within a serial.
(9) *March unit gap time (MUGT)—time measured between the rear of one march unit and the*
front of the next march unit within a serial as they move past any given point.
(10) *Serial gap (SG)—gap between the rear of one serial and the front of the next serial*
within a march column.
(11) *Serial gap time (SGT)—time measured between the rear of one serial and the front of the*
next serial within a march column as the move past any given point.
(12) *Time distance (TDIS)— time required to move from one point to another at a given rate*
of speed.
(13) *Road clearance time— time it takes from when the first vehicle passes the SP to when*
the last vehicle passes the RP.
(14) *Extra time allowance (EXTAL)—time added to allow for the accordion effect during a*
movement and unplanned delays.
(15) *Rate of march--average number of kilometers traveled in any given period of time.*
(16) *Density--average number of vehicles per kilometer.*
(17) *Speed--planned velocity of the lead vehicle (kmph).*

Formulas.

(1) *Pass time (PST). (# of vehicles × 60 / (density × speed)) + EXTAL + (# of SGs × SGT) +*
(# of MUGs × MUGT).

(2) *Time distance (TDIS). Distance (km) / rate of march.*

(3) *Road clearance time. ((TDIS + 60) + PST) / 160.*

(4) *Extra time allowance (EXTAL). # of vehicles / 25.*

(5) *Rate of march. Distance / time.*

(6) *# of MUGs. # of march units – # of serials.*

(7) *# of SGs. # of serials – 1.*

General Supply Planning: Note: Requirement = Strength * Planning Factor

Class of Supply	Planning Factors
Class 1 (MRE)	1.75lb per meal M-M-M = 5.25lbs per person per day (PPD)
Class 1 (Water)— Gallons/Man/Day	Drink = 1.5, Pers Hygiene=1.7, Field Feeding = 2.8, Injury Treatment = .1 // total = 6.1
Class II	1.9PPD
Class IIIP	.51PPD
Class IIIB (consumption in gallons)	FA BN = 6,581 / CAB = 15, 367 / BSB = 30, 393 / ABCT Total = 40,808
Class IIIB (Vehicle gallons per hour)	M1-Idle=17.3, Cross Country = 56.6, Road = 44.6 // M2/3—Idle = 1.4, CC = 18, Road = 8.6 M113FOV—Idle = 1, CC = 10.5, Road = 8.9// M88—Idle = 2, CC=42, Road = 31 M9ACE—Idle=1.4, CC= 12.6, Road = 9.3 // M109—Idle=2.2, CC=16, Road=11.8
Class IV	9.01PPD
Class VI (after D+60)	3.74PPD (Health and Comfort Package 58lb—10 persons for 30 days)
Class IX	NA calculated in tonnage
Mail	1.34PPD

EQUIPMENT LOSS RATES (PERCENT)

Loss Rate	M1	M2/3	M109	MLRS	ATK HEL	CGO HEL	Support Stytem
Attack	18%	22%	10%	10%	30%	20%	10%
Delay	25%	27%	15%	18%	20%	20%	15%
Hasty Defense	25%	27%	18%	20%	25%	20%	15%
Preparation Defense	18%	20%	13%	15%	30%	20%	18%
Reserve	10%	10%	10%	13%	25%	20%	10%
Uncommit	5%	5%	5%	5%	5%	5%	5%
Static	5%	5%	5%	5%	5%	5%	5%

LOSS CATEGORY by TYPE OPERATION

Category	Non-Repairable	Repairable
Attack	20%	80%
Delay	25%	75%
Hasty Defense	30%	70%
Prepared Defense	15%	85%
Reserve	15%	85%
Uncommitted	10%	90%
Static	10%	90%

LEVEL of MAINTENANCE DISTRIBUTION of EQUIPMENT FAILURES

Estimate	Organizational	DS	DS Backup	EAC
Attack	20%	30%	30%	20%
Delay	15%	20%	20%	45%
Hasty Defense	15%	25%	30%	30%
Prepared Defense	20%	25%	30%	25%
Reserve	25%	30%	30%	15%
Uncommitted	30%	30%	20%	20%
Static	30%	30%	20%	20%

DAILY SOLDIER LOSS RATES

Operation	Counter Reconnaissance or Breach	Day 1: Decisive Operations	Succeeding Days
Offense:			
-Division/BCT in contact	.007	.04	.02
-Division/BCT not in contact	.001	.002	.0001
-EAD	.0003	.0004	.0001
Covering Force:			
-Division/BCT in contact	.005	.02	.014
-Division/BCT not in contact	.001	.002	.0001
-EAD	.0002	.0002	.0002
Defense:			
-Division/BCT in contact	.009	.05	.03
-Division/BCT not in contact	.001	.002	.0001
-EAD	.0004	.0005	.0002
Retirement/Delay:			
-Division/BCT in contact	.03	.02	.02
-Division/BCT not in contact	.03	.02	.0001
-EAD	.0002	.0004	.0001
Offense:			
-Division/BCT in contact	.007	.04	.005
-Division/BCT not in contact	.001	.002	.0001
-EAD	.0003	.0004	.0001

FORCE HEALTH PROTECION PLANNING ECHELONS

Echelon I	Unit level; includes self aid/buddy aid, and emergency life saving.
Echelon II	Care by a medical company staffed with physicians and physician's assisstants (Pas), medics, technicians, and nursing staff. Treatment includes basic resuscitation and stabilization and may include surgical capability. This is the first echelon where blood is available for transfusion.
Echelon III	Combat zone care requires hospital clinical capabilities. Typically a combat support hospital (CSH) is staffed and equipped to provide resuscitation, initial wound surgery, and post operative treatment.
Echelon IV	Care in a theater area medical treatment facility (MTF). Clinical capabilities provide not only a surgical capability as in Echelon III, but also further therapy for patients in the recovery phase who can return to duty within the theater evacuation policy.
Echelon V	Care is convalescent, restorative, and rehabilitative and is provided by DOD, VA, and civilian hospitals in CONUS.

LOSSES BY TYPE (% OF TOTAL LOSSES)

	BCT/Division AO	EAD
Killed	18%	16%
Wounded	80%	84%
Missing	2%	negligible

DISEASE and NONBATTLE INJURY CALCULATOR CHART

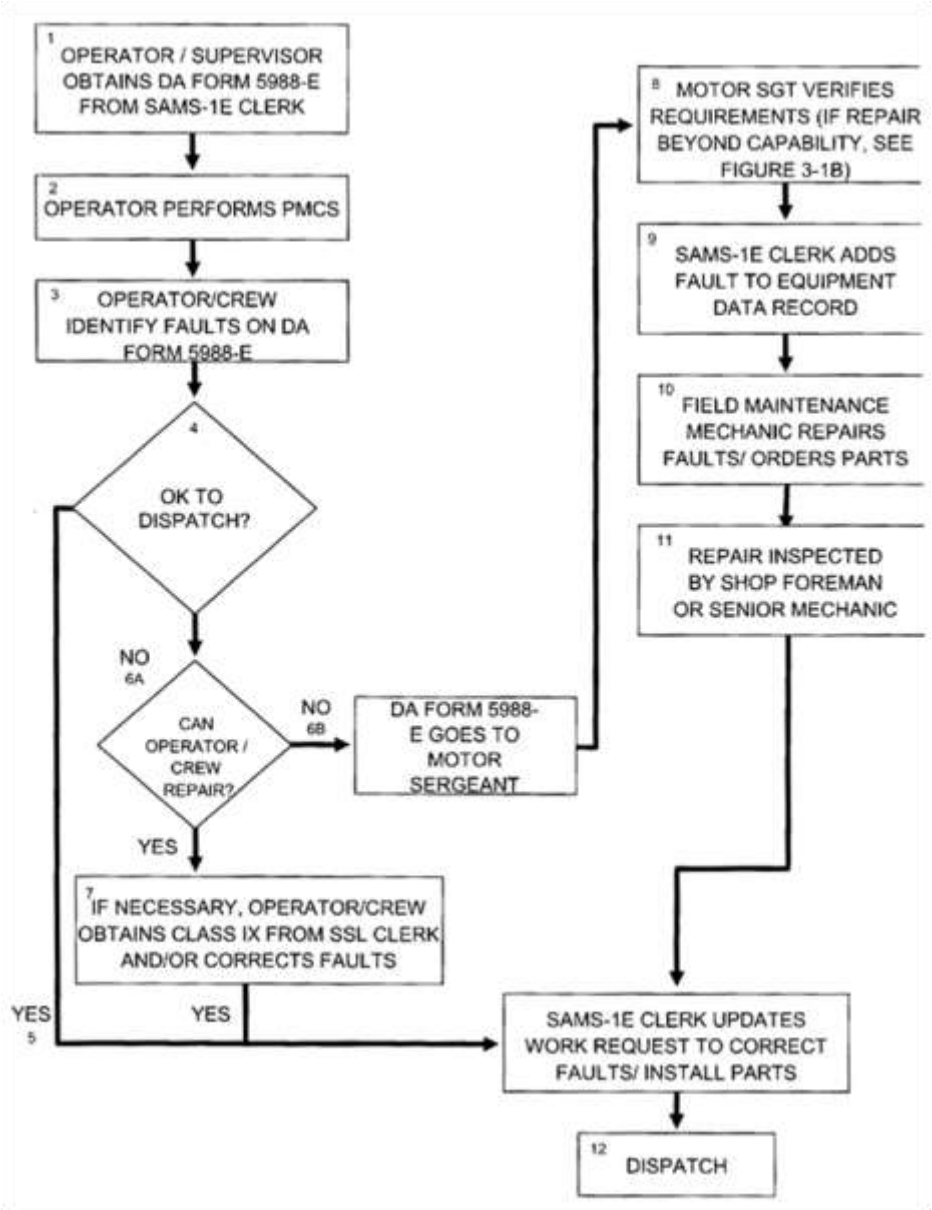
Location/Type of Operation	1	2	3	4	5
U.S	0.65	0.46	0.35	0.27	0.20
Bosnia	1.74	1.23	0.94	0.73	0.54
Columbia	2.00	1.41	1.08	0.83	0.62
Egypt	2.00	1.41	1.08	0.83	0.62
Germany	0.76	0.54	0.41	0.32	0.24
Gerenada	1.64	1.16	0.89	0.68	0.51
Iraq	2.09	1.48	1.13	0.87	0.65
Japan	0.86	0.61	0.46	0.36	0.27
Jordan	1.70	1.20	0.92	0.71	0.53
Kuwait	1.51	1.07	0.82	0.63	0.47
North Korea	1.97	1.40	1.07	0.82	0.62
Saudi Arabia	1.57	1.11	0.85	0.65	0.49
South Korea	1.52	1.08	0.82	0.63	0.48
Somalia	2.62	1.85	1.42	1.09	0.82
Turkey	1.77	1.25	0.96	0.74	0.55
Zaire	2.70	1.91	1.46	1.13	0.84
Rate after in AO past 60 days	**0.65**	**0.46**	**0.35**	**0.27**	**0.20**

LEGEND for OPERATION TYPES

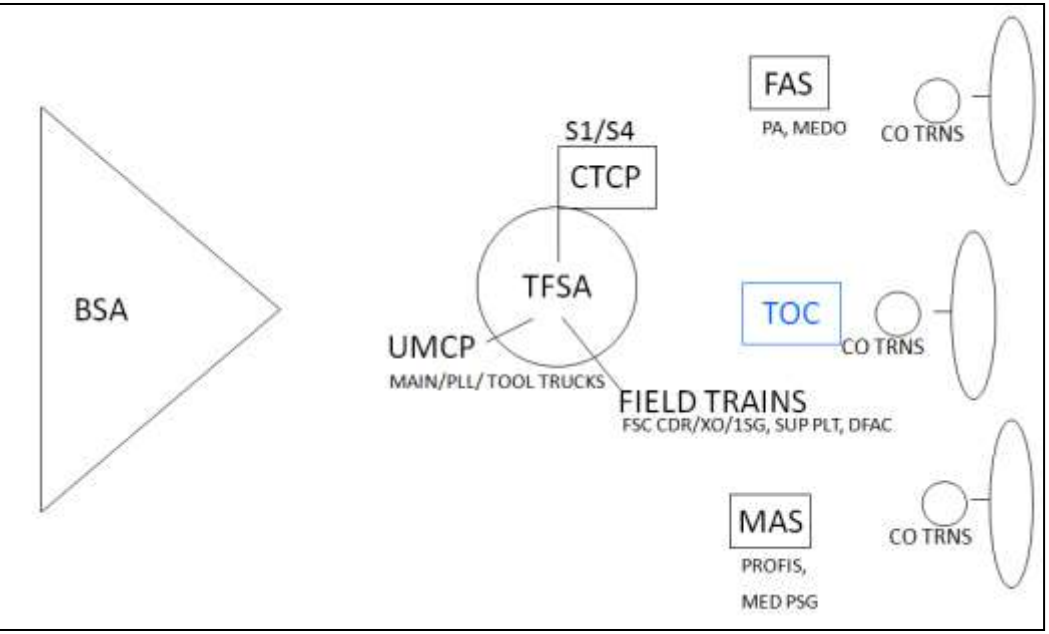
1	Combat forces in high intensity operations in division area
2	Combat forces in division area during periods of less than high intensity ops and support forces in division rear during all periods
3	Combat forces not in the division area and all forces in rear staging/assembly area
4	Echelon above division support forces not in the division rear
5	All types of forces in stability ops and support ops where CDRs have strict control of their troop living environment. Strict control consists of: no alcohol; minimal contact with indigenous population; and all food/water procurement, storage and preparation under supervision of preventive medicine personnel.

FIELD MAINTENANCE WORKFLOW

CLASS		SUPPLIES
	I	Subsistence and gratuitous health and comfort items.
	II	Clothing, individual equipment, tentage, organizational tool sets and kits, hand tools, and administrative and housekeeping supplies and equipment.
	III	Petroleum fuels, lubricants, hydraulic and insulating oils, preservatives, liquids and gases, bulk chemical products, coolants, de-icer and antifreeze compounds, components and additives of petroleum and chemical products, and coal.
	IV	Construction materials including installed equipment and all fortification and barrier materials.
	V	Ammunition of all types (including chemical, radiological, and special weapons), bombs, explosives, mines, fuzes, detonators, pyrotechnics, missiles, rockets, propellants, and other associated items.
	VI	Personal demand items such as snack foods, beverages, cigarettes, soap, toothpaste, writing materials, cameras, batteries, and other nonmilitary sales items.
	VII	Major end items such as launchers, tanks, mobile machine shops, and vehicles.
	VIII	Medical materiel, including repair parts peculiar to medical equipment.
	IX	Repair parts and components to include kits, assemblies and subassemblies (reparable or nonreparable) which are required for maintenance support of all equipment.
CA	X	Material to support nonmilitary programs such as agriculture and economic development (not included in Classes I through IX).
	Miscellaneous	Water, maps, salvage, and captured material.



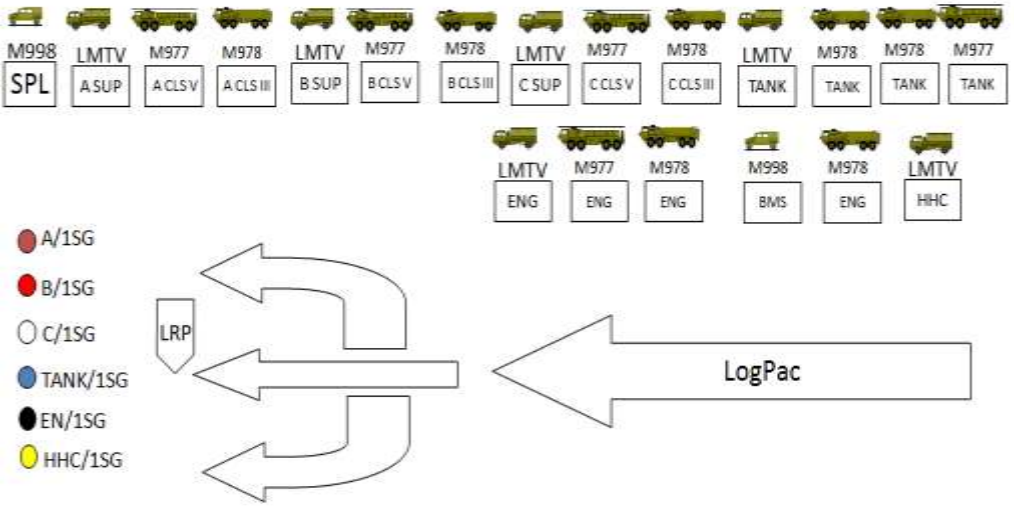
Sustainment Battlefield Architecture



LRP Meeting

- ATTENDEES
  - S1/S4
  - BMO
  - 1SGs
  - CSM
- ACTIONS
  - Allows key logisticians to get together prior to LOGPAC and discuss CSS Issues
  - S4 is overall responsible for selection of location and time of LRP
  - Usually held 30 minutes prior to actual LRP
  - S4 collects orange reports
  - BMO hands out/collects 5988Es
  - CSM opportunity to talk to all 1SGs about soldier issues
  - TTP S1/S4 briefs BN Plan to 1SGs at LRP Meeting
  - TTP CSS Rehearsal done at the LRP 1 hour prior to LRP meeting

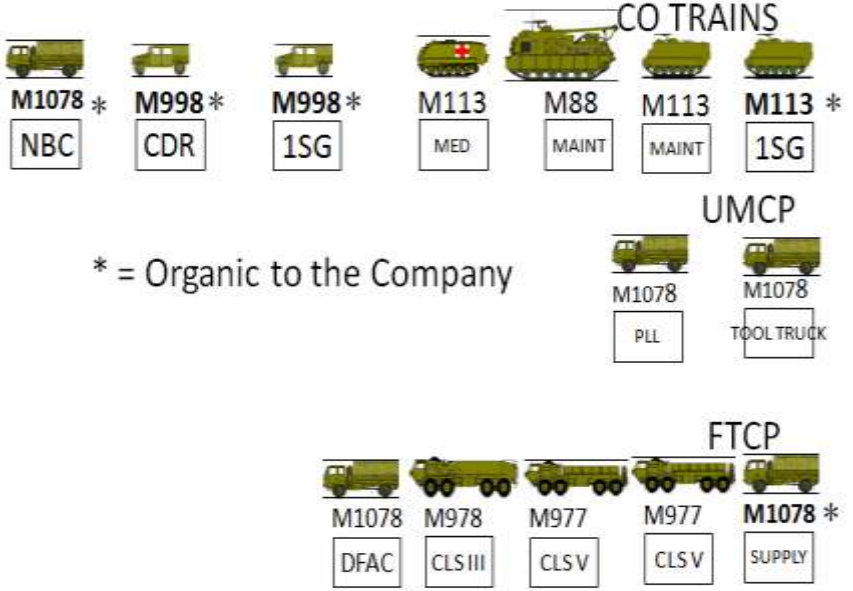
TF LOGPAC



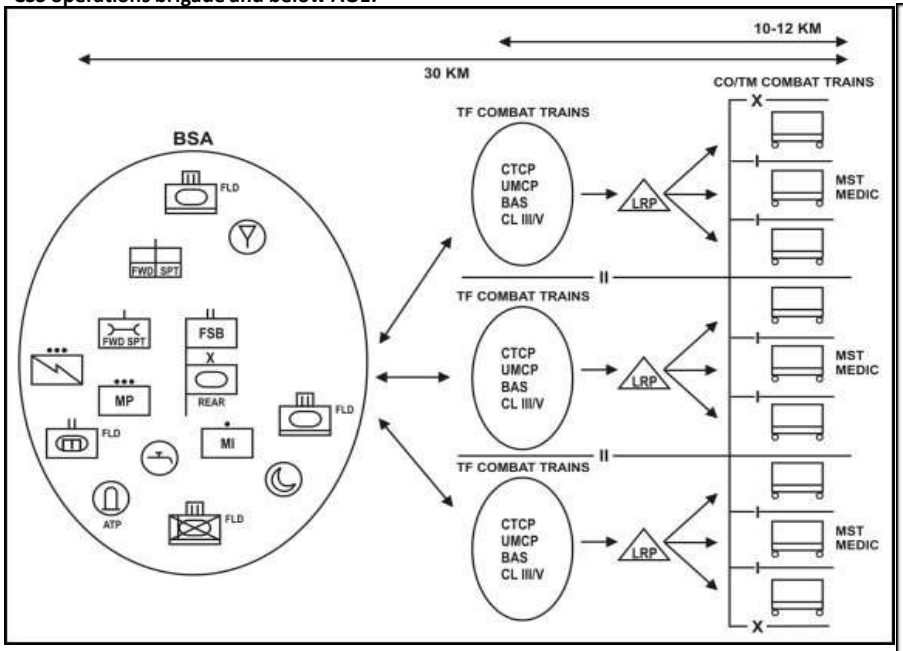
CO/TM SUPPLY SGTs & 3/5 Squads break off & link up with their 1SG, the LOGPAC never stops rolling.

Support PL waits for 1SGs to return with their 3/5 squads and Supply SGTs. If they do not meet the 2 hour time hack they escort them to the BSA

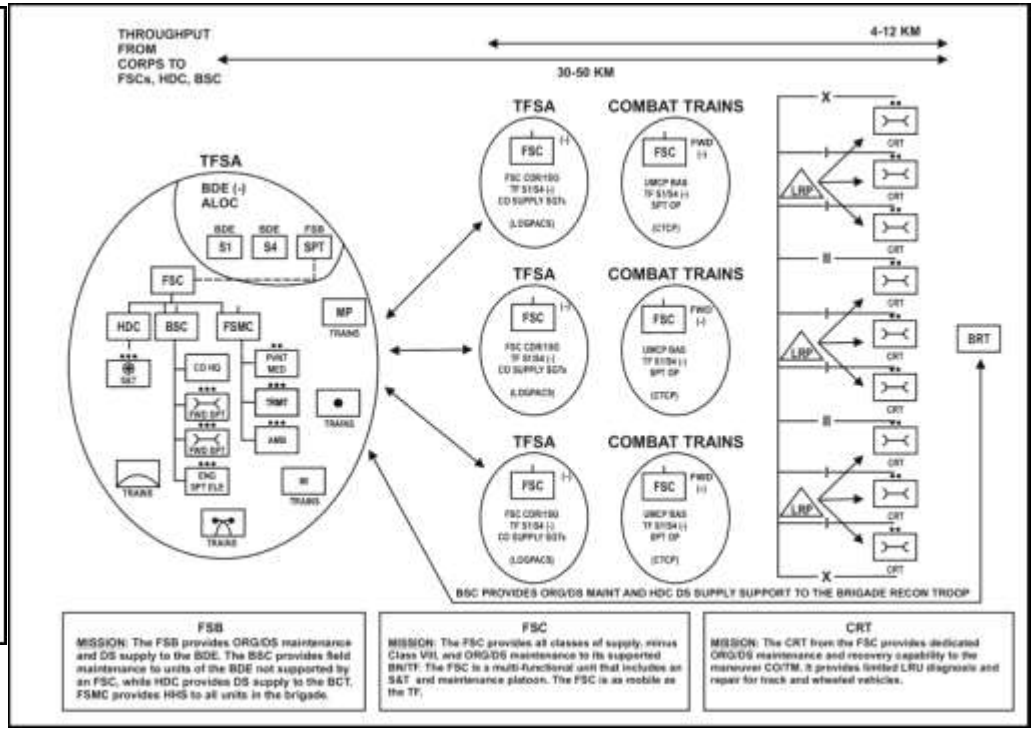
Company Trains



CSS operations brigade and below AOE.



CSS operations brigade and below for Force XXI BCT



Forward support company doctrinal template.

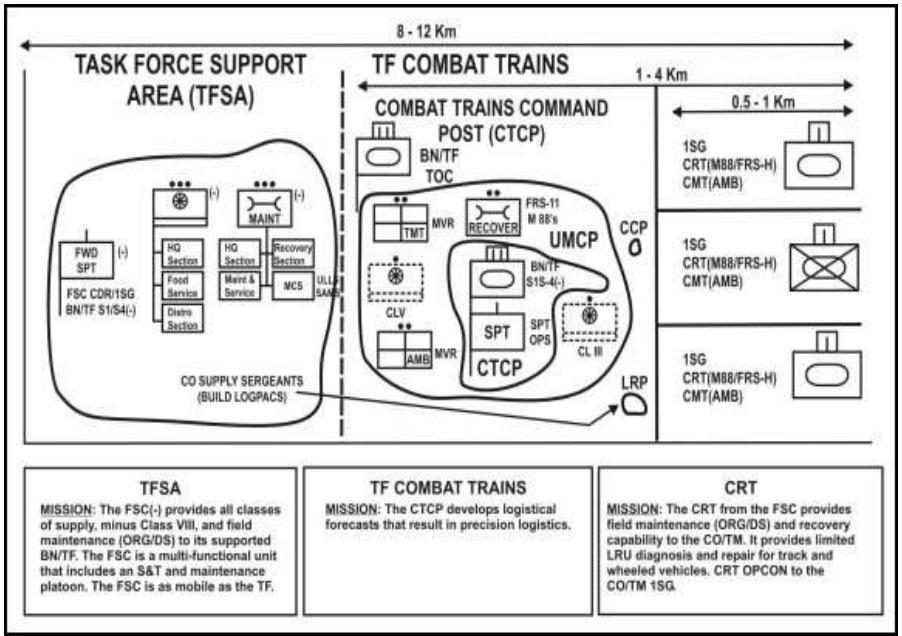


Figure 11-3. Service station resupply method.

Figure 11-5. In position method.

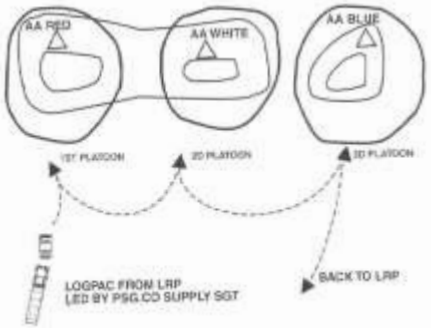


Figure 11-4. Tailgate resupply

Soldiers Load:

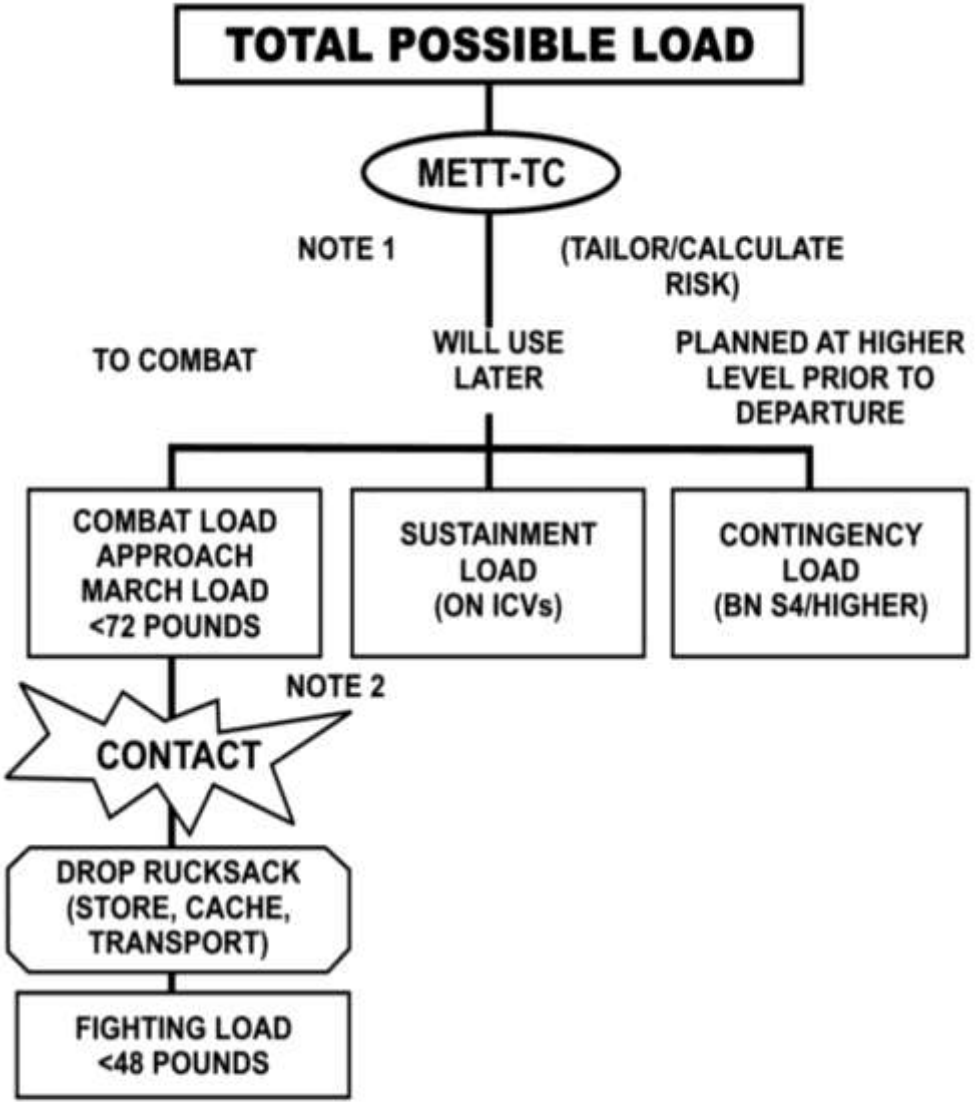
- 30% of soldiers body weight (maintain agility and stamina, alertness, and mobility) Avg. Soldier 160lbs = 48 lbs
- Ties to Load Plans: CDR use the estimate of situation to determine the amount of supplies and equipment that is essential. It accounts for impact of the Soldier- load problem.
    - Carry what you need, have SPT PLT carry the rest

Loads are broken down into 3 echelons:

Combat Load (approach march {72lbs}, fighting load {48lbs})

Sustainment Load (stored in the BSA)

Contingency Load (CDR determines how stored and where)



NOTE 1: IF METT-TC CHANGES, START THE PROCESS OF RETAILORING THE LOAD.

NOTE 2: IF BN S4 DOES NOT HAVE RESOURCES TO STORE AND BRING FORWARD SUSTAINMENT LOAD, EMERGENCY APPROACH MARCH LOADS OF 120 POUNDS CAN BE CARRIED. MARCH SPEEDS WILL BE SLOW, AND TROOPS WILL BE FATIQUED.

Indiviual Soldier Load Weight Planning Factors

Environment Protection

Rain Gear	2.50 LB
Field Jacket	3.00 LB
Pile Cap	0.26 LB
2-Quart Canteen, Cover, Water	4.80 LB
Poncho Liner	1.60 LB
Sleeping Bag	7.50 LB
Total	19.66 LB

Special Mission Items

Protective Vest	8.00 LB
Alice Pack w/ Frame	6.30 LB
Grenade, Smoke	2.56 LB
AT4	14.80 LB
Total	31.66 LB

Additional Items

Trip Flare	1.95 LB
M14 AP Mine	0.49 LB
M16 AP Mine	11.20 LB
Claymore	3.50 LB
M21 AT Mine	22.70 LB
60-MM Mortar (RD)	3.50 LB
Parachute Flare / Starcluster	1.00 LB
Total	44.34 LB

Common Items

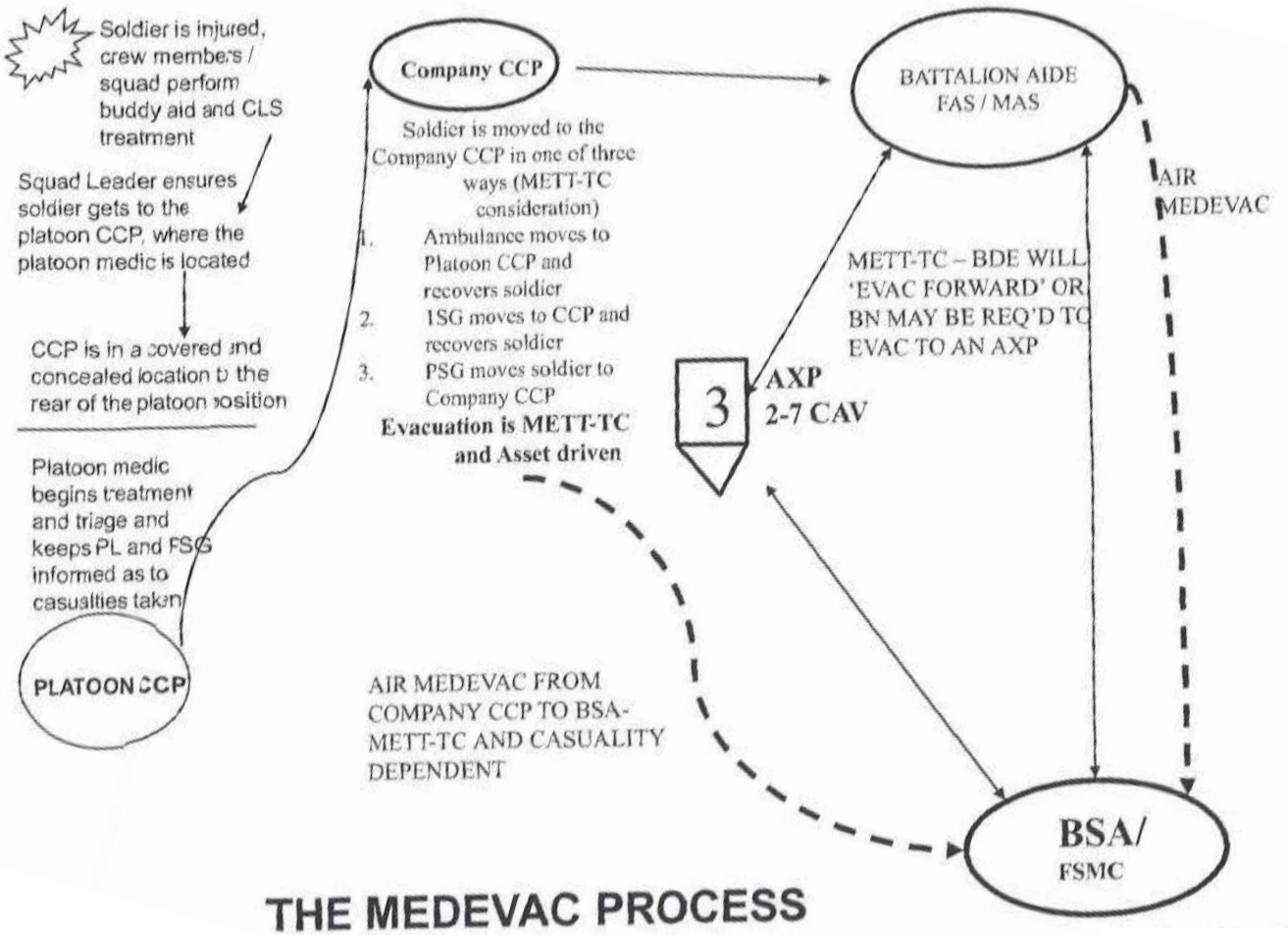
BDUs, Boots	8.20 LB
Pistol Belt, Straps, First AID Kit	1.60 LB
Canteen, Cup and Cover, w/ W	3.30 LB
Poncho	1.70 LB
Gloves	0.30 LB
Socks	0.30 LB
MRE (1)	1.47 LB
Bayonet, Scabbard	1.30 LB
Protective Mask	3.00 LB
Total	21.17 LB

Duty Load

M16A2	8.00 LB
Two Ammo Pouches	0.50 LB
Two M67 Fragmentary Grenades	2.00 LB
Seven 5.56 Magazines	7.00 LB
Helmet	3.10 LB
Total	20.60 LB

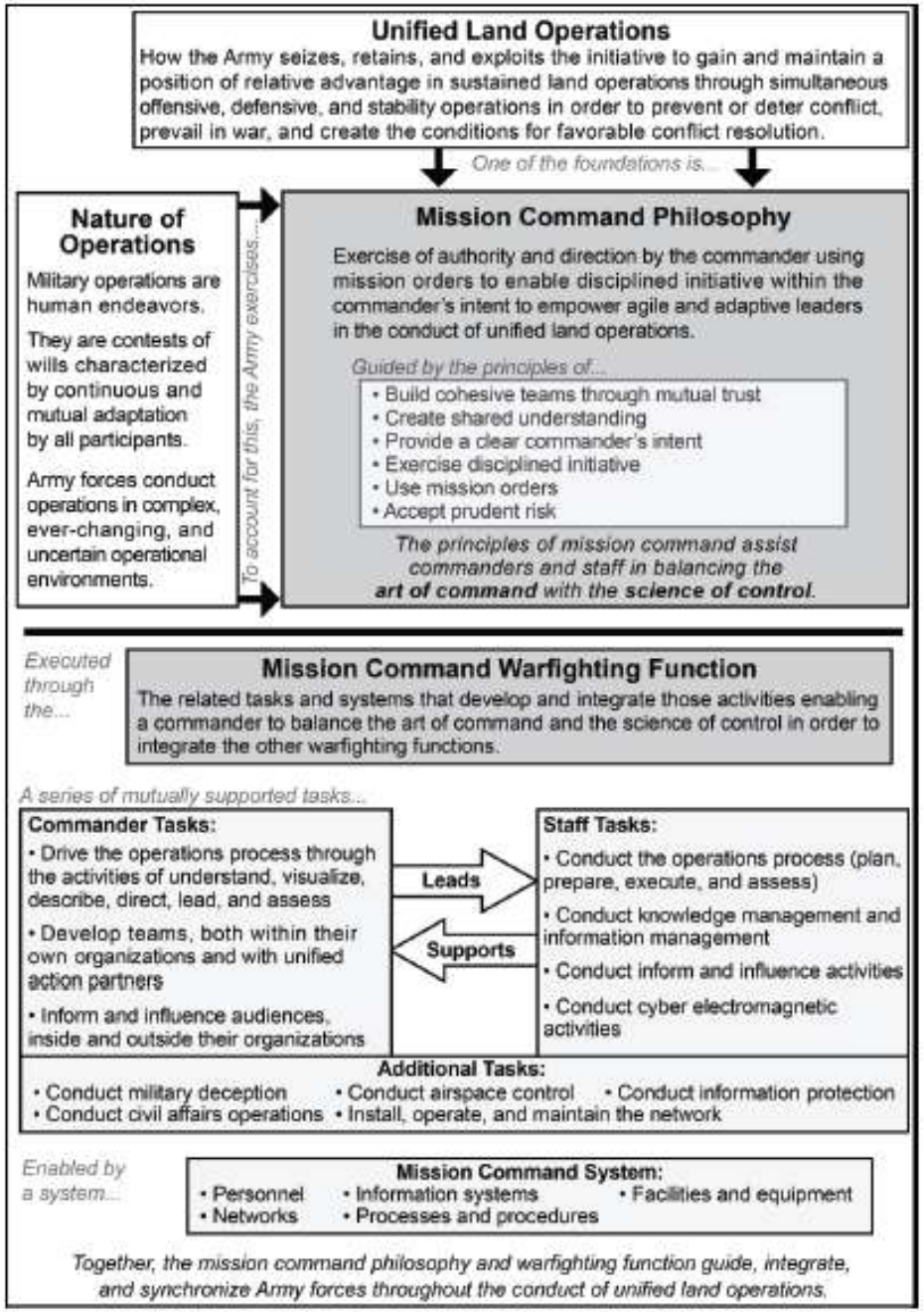
CASUALTY EVACUATION CHECKLIST

- S1, MED CO CDR, MED PLT LDR PREPARE CASEVAC OPLAN THAT IS COORDINATED WITH CO XO/1SG'S
- ANTICIPATE CASUALTIES, PRIORITIZE ASSETS, MOVE BN ASSETS TO MAIN EFFORT
- USE NON-STANDARD GROUND EVAC (NOT MED VEHS) FOR LIGHTLY WOUNDED
- LOCATE BAS & TX TMS AS FAR FWD AS METT-T ALLOWS (CONSIDER EN ARTY/MTR'S)
- MAINTAIN MOBILITY OF BAS
- USE STANDARDIZED CHECKPOINT SYSTEM ON OVERLAYS. LET THEM SERVE AS ON ORDER CCP'S - MUST BE KNOWN TO SQUAD LDR LEVEL
- MUST STOCK ENOUGH CLASS VIII FOR WORSE CASE SCENARIO (MASCAL)
- TASK ORG & ALLOCATE CASEVAC ASSETS BASED ON PROJ CAS'S, DELIBERATE ATK, ATTACH ADDITIONAL ASSETS TO MAIN EFFORT TO AUGMENT CASEVAC
- REQUEST ADDT'L CASEVAC & TREATMENT SPT FROM FWD SPT MED CO
- PLAN & USE AMBULANCE EXCHANGE POINTS (AXP) WHEN EVAC ROUTE TAKES LONGER THAN 30 MINS
- USE APPROPRIATE GRND/AIR EVAC BASED ON PATIENT CATEGORIES (URGENT/PRIORITY/ROUTINE) & METT-T
- MAKE MAX USE OF TACTICAL AND LOG VEHICLES FOR CASEVAC (BACK HAUL)
- USE MEDICAL SUPPORT MATRIX TO MANAGE ASSETS
- TOC AND TAC MUST KNOW AID STATION LOCATION AT ALL TIMES
- ATTEMPT TO MOVE AMBULANCES WITH CONVOYS
- ISSUE LITTERS AND ADDTL CL VIII TO MANEUVER UNITS TO ASSIST IN CASEVAC. HAVE EACH SQUAD CARRY A POLELESS LITTER (NSN 6530-00-783-7510)
- FOLLOW & SUPPORT WITH JUMP AID STATIONS. DESIGNATE CHECKPOINTS IN OPORD FOR AID STATIONS TO JUMP ON ORDER AS REQUIRED
- MUST HAVE REDUNDANT COMMO PLAN
- USE COLOR CODED TRIAGE SOP: COLORED SIGNS DURING DAY, CHEM LIGHTS AT NIGHT
- AMBULANCES MUST DO RECONS
- MED PLT LDR MUST GO FWD TO XO/1SG CP'S & COORDINATE CONTINGENCIES
- MUST DESIGNATE, TRAIN SQD COMBAT LIFESAVERS, & PROVIDE EQUIP. 2 CBT LIFESAVERS PERS SQD. CARRY EXTRA RINGERS SOLUTION AND IV KITS
- USE BATTLE ROSTER SYSTEM FOR REPORTING AND MANAGING CASUALTIES
- ENSURE USE OF 1155/1156



THE MEDEVAC PROCESS

MISSION COMMAND



Mission command system—the arrangement of:

- ***Personnel***
- ***Networks***
- ***Information systems***
- ***Processes* and procedures**
- **Facilities and equipment**

that enable commanders to conduct operations. Commanders organize their mission command system to support Decision making and facilitate communication.

The six principles of mission command are—

- Build cohesive teams through mutual trust.
- Create shared understanding.
- Provide a clear commander's intent.
- Exercise disciplined initiative.
- Use mission orders.
- Accept prudent risk.

Mission Command

The exercise of authority and direction by the commander using mission orders to ensure disciplined initiative within the commander's intent to accomplish full spectrum operations. It uses art of command and the science of control, supported by staffs, to integrate the warfighting functions and enable agile and adaptive commanders, leaders and organizations.

TWO COMPONENTS

The Art of *Command:*

The creative and skillful exercise of authority through decision making and leadership.

The Science of *Control:*

Detailed systems and procedures to improve commander's understanding and support execution of missions.

Enabled by Mission Command Systems & Networks

COMMANDER'S TASKS

- Drives the Operations Process
- Understand, Visualize, Describe, Direct, Lead & Assess
- Lead Development of Teams Among Modular Formations & JIIM Partners
- Lead Inform & Influence Activities: Establish Themes and Messages & Personally Engage Key Players

LEADS

Design Pervades all Tasks

SUPPORTS

STAFF TASKS

- The Operation Process: Plan, Prepare, Execute and Assess
- Knowledge Management & Information Management
- Inform/Influence Activities & Cyber/Electromagnetic Activities

Enables: Operational Adaptability

- Understand the Operational Environment
- Adaptive Teams that Anticipate Transitions
- Acceptance of Risk to Create Opportunity
- Influence friendly, neutrals, adversaries, enemies, and JIIM partners

Result: Successful Unified Land Operations

Table 2-1. Army command relationships

If relation-ship is:	*Then inherent responsibilities:*							
	Have command relation-ship with:	**May be task-organized by:[1]**	**Unless modified, ADCON responsi-bility goes through:**	**Are assigned position or AO by:**	**Provide liaison to:**	**Establish/ maintain communi-cations with:**	**Have priorities establish-ed by:**	**Can impose on gaining unit further command or support relationship of:**
Organic	All organic forces organized with the HQ	Organic HQ	Army HQ specified in organizing document	Organic HQ	N/A	N/A	Organic HQ	Attached; OPCON; TACON; GS; GSR; R; DS
Assigned	Combatant command	Gaining HQ	Gaining Army HQ	OPCON chain of command	As required by OPCON	As required by OPCON	ASCC or Service-assigned HQ	As required by OPCON HQ
Attached	Gaining unit	Gaining unit	Gaining Army HQ	Gaining unit	As required by gaining unit	Unit to which attached	Gaining unit	Attached; OPCON; TACON; GS; GSR; R; DS
OPCON	Gaining unit	Parent unit and gaining unit; gaining unit may pass OPCON to lower HQ[1]	Parent unit	Gaining unit	As required by gaining unit	As required by gaining unit and parent unit	Gaining unit	OPCON; TACON; GS; GSR; R; DS
TACON	Gaining unit	Parent unit	Parent unit	Gaining unit	As required by gaining unit	As required by gaining unit and parent unit	Gaining unit	TACON;GS GSR; R; DS

Note: [1] In NATO, the gaining unit may not task-organize a multinational force. (See TACON.)

ADCON	administrative control	HQ	headquarters
AO	area of operations	N/A	not applicable
ASCC	Army Service component command	NATO	North Atlantic Treaty Organization
DS	direct support	OPCON	operational control
GS	general support	R	reinforcing
GSR	general support–reinforcing	TACON	tactical control

Table 2-2. Army support relationships

If relation-ship is:	*Then inherent responsibilities:*							
	Have command relation-ship with:	**May be task-organized by:**	**Receives sustain-ment from:**	**Are assigned position or an area of operations by:**	**Provide liaison to:**	**Establish/ maintain communi-cations with:**	**Have priorities established by:**	**Can impose on gaining unit further command or support relation-ship by:**
Direct support[1]	Parent unit	Parent unit	Parent unit	Supported unit	Supported unit	Parent unit; supported unit	Supported unit	See note[1]
Reinforc-ing	Parent unit	Parent unit	Parent unit	Reinforced unit	Reinforced unit	Parent unit; reinforced unit	Reinforced unit; then parent unit	Not applicable
General support–reinforc-ing	Parent unit	Parent unit	Parent unit	Parent unit	Reinforced unit and as required by parent unit	Reinforced unit and as required by parent unit	Parent unit; then reinforced unit	Not applicable
General support	Parent unit	Parent unit	Parent unit	Parent unit	As required by parent unit	As required by parent unit	Parent unit	Not applicable

Note: [1] Commanders of units in direct support may further assign support relationships between their subordinate units and elements of the supported unit after coordination with the supported commander.

SIGNAL ASSETS AND SIGNAL FLOW

Upper Tactical Internet (Upper TI)

High data rate TCP/IP communications systems used to link TOCs together. NTDR radios, CPNs, JNNs, and MSE fall under the Upper TI.

Lower Tactical Internet (Lower TI)

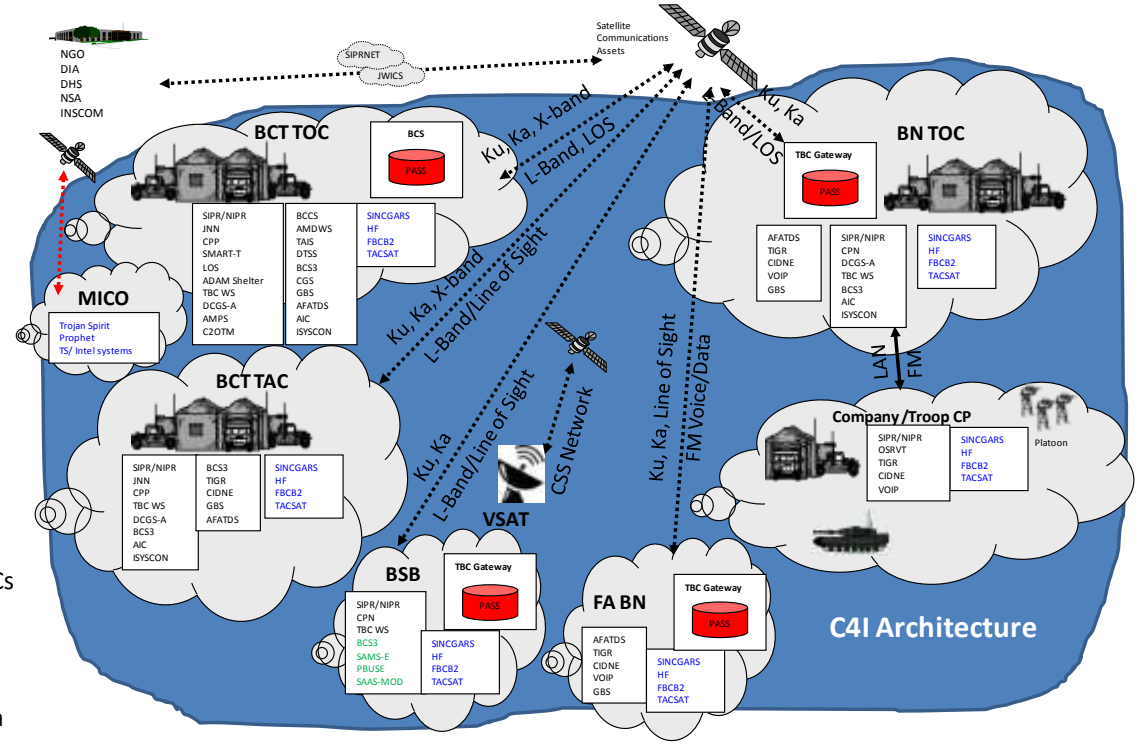
A collection of low bandwidth radios used to pass TCP/IP data down to the soldier in the foxhole. The lower TI consists primarily of EPLRS, SINCGARS, and L-Band satellite transceivers.

Upper TI (Tactical Internet)

- ✓CPOF – Command Post of the Future
- ✓AFATDS - Advanced Field Artillery Tactical Data System
- ✓AMDWS - Air and Missile Defense Workstations
- ✓MCS – Maneuver Control System
- ✓BCS3 - Battle Command Sustainment Support System
- ✓DCGS-A - Distributed Common Ground System- Army
- ✓DTSS - Digital Topographic Support System
- ✓TIGR - Tactical Ground Reporting
- ✓TAIS - Tactical Airspace Integration System
- ✓ High data rate TCP/IP communications systems used to link TOCs together. NTDR radios, CPNs, JNNs, and MSE fall under the Upper TI

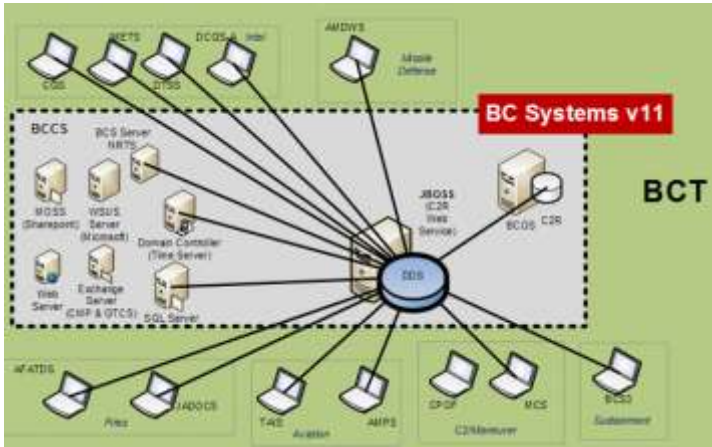
Lower TI (Tactical Internet)

- ✓ A collection of low bandwidth radios used to pass TCP/IP data down to the soldier in the foxhole. The lower TI consists primarily of EPLRS, SINCGARS, and L-Band satellite transceivers.
- ✓ EPLRS – Terrestrial (Line-Of-Sight)
- ✓ SINCGARS
- ✓ L-Band satellite transceivers (ex. BFT)- Satellite



5 Elements of a Command Post

- **People -** specific manning as it pertains to operation of equipment in the CP and baseline training. Personnel distribution is expected to cover Day and Night shift for every position in the CP.
- **Infrastructure –** physical non-interactive equipment, power generation and vehicle platforms including (tents, tables, chairs, wires, generators, light sets, power outlets, etc.)
- **Systems (MSN CMD Tools)–** specific equipment to accomplish the mission including (CPN/JNN, ABCS, 1523s, CNR, FBCB2, etc.)
- **Processes -** SOPs, Battle Drills, Knowledge Management and Functions of the TOC.
- **Leadership –** management of CP processes and personnel, execution of scenarios, knowledge and action. Leadership is the recipient of the effort.



SIGNAL PLANNING CONSIDERATIONS

Signal Battlefield Assessment for Mission Analysis

- **Unit Communications Maintenance Status**
  - Status of FM (voice and digital), retrains, 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 dead space 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 retrains 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 retrains 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**

Example Company Pace Plan

Primary: FM (FH) Radio

Alternate: HF Radio

Contingency: FBCB2

Emergency: Iridium Satellite Phone

COMMUNICATIONS ASSETS CAPABILITIES

FM (PRC77, 524, and 246)

Frequency Range: 20-88 Mhz

Between 2 Antenna Group OE-254 GRC

Average Terrain	58 KM
Difficult Terrain	48 KM

Between Antenna Group OE-254 to Vehicular Whip

Average Terrain	48 KM
Difficult Terrain	40 KM

Between 2 Whip Antennas

Average Terrain	13 KM
Difficult Terrain	9 KM

AM AN/GRC-193

Frequency Range 2-29.999 Mhz

Groundwave (Whip)	32 KM
Skywave (Nevis, Doublet)	1600-2400 KM

*Range is very dependent upon terrain, frequency, antenna, time, and atmospheric conditions.

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 Voice/CW Data Receive Only Voice and Data This will allow you to receive You cannot transmit in these modes	Single sideband Voice/CW Data Receive oinly
RF Output Power	20W	20W
RF Output Impedance	50 ohms, unbalances output protected to infinite VSWR	51 ohms, unbalances 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 4 to 12 seconds
Power Requirements	20 to 32 V DC with input at 3.5 amp for transmit typical 200 ma for receive	24 to 32 V AC, 26.5 V DC normal
Operating Tempeture Range	-51 deg F to +160 deg F	-51 deg F to +160 deg F
Mean Time Before Failure	2500 Hours	2501 Hours
Dimensions	12.5'' x 10.5'' x 2.75'' (D x W x H)	12.5'' x 8.12'' x 8.63'' (W x H x D)
Weight	14 lbs including battery	50 lbs
Antennas		Whip, Slant wire, Dipole, NVIS

SINCGARS

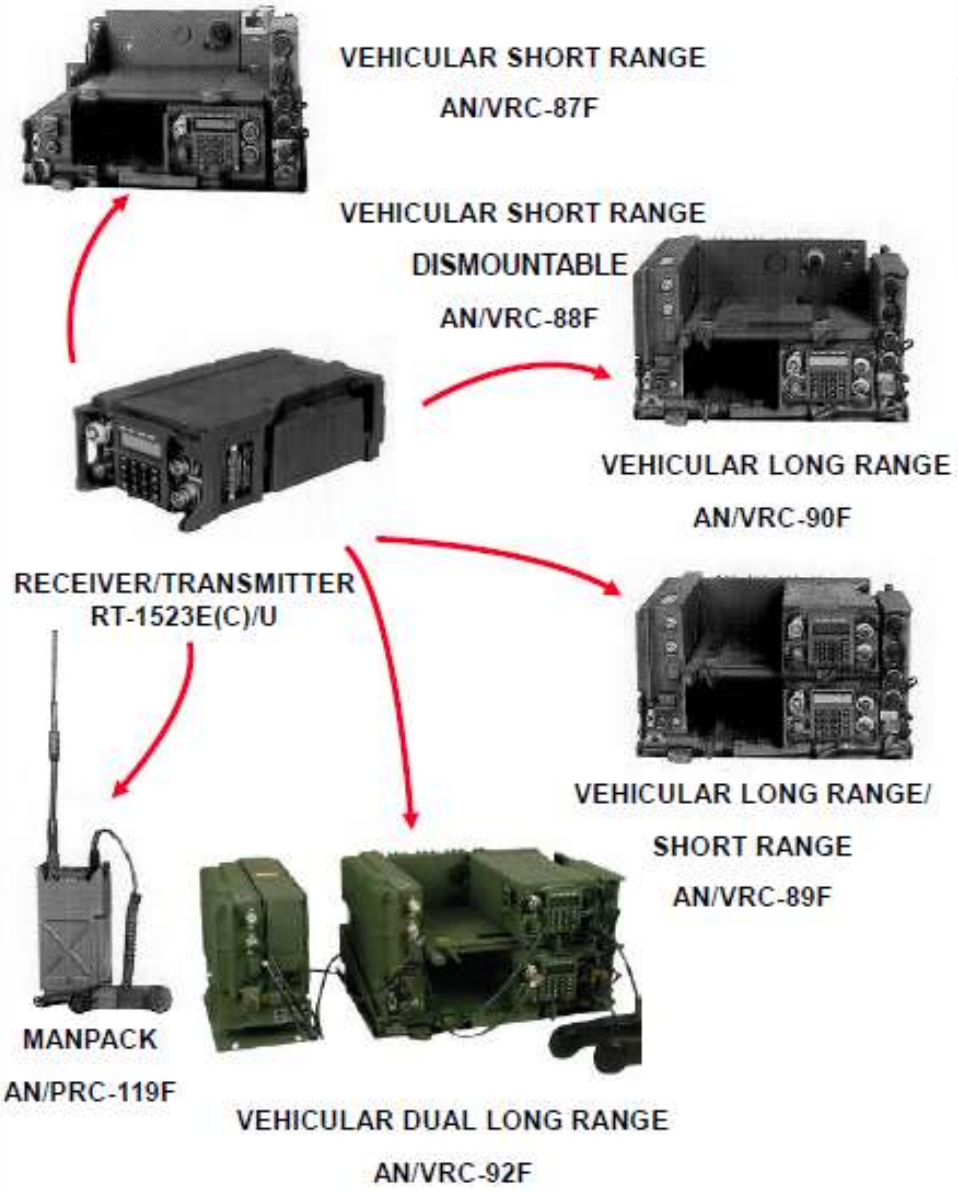
SINGLE CHANNEL GROUND AND AIRBORNE RADIO (SINCGARS)

All references pertaining to the SINCGARS family of radios refer to the Integrated COMSEC (ICOM) version. The radio models will range from the RT 1523A, B, C, D to the E model, or Advanced System Improvement Product (ASIP) version of the radio.

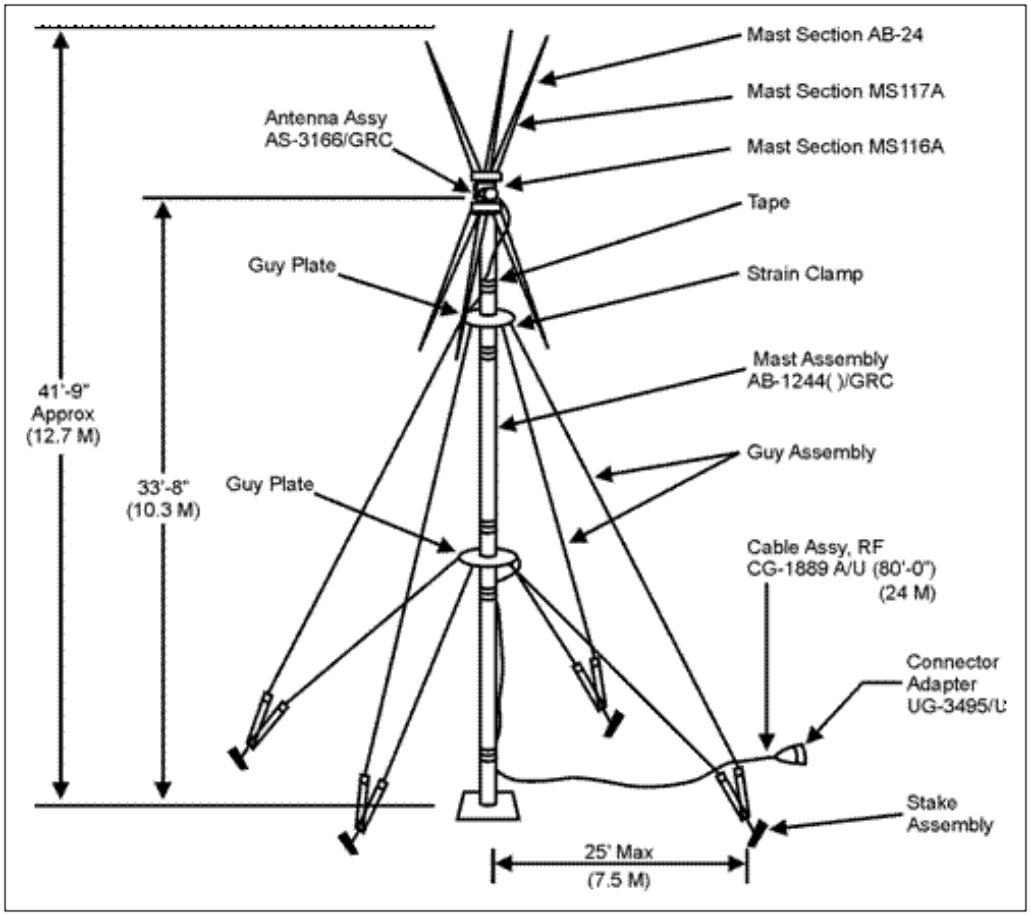
ASIP=Latest Version of SINCGARS

SINCGARS radio configurations:

AN/PRC-119F	Manpack radio with associated components. The term "manpack" is the common name for the soldier carried AN/PRC-119A.
AN/VRC-87F	One short range radio.
AN/VRC-88F	One short range radio with dismount components included.
AN/VRC-89F	One short range and one long range radio. One power amplifier included.
AN/VRC-90F	One long range radio. One power amplifier is included.
AN/VRC-91F	One short range and one long range radio. One power amplifier and dismount components are included.
AN/VRC-92F	Two long range radios. Two power amplifiers are included.



OE-254



Julian Date Calander

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	01	32	60	91	21	52	82	13	44	74	05	35
2	02	33	61	92	22	53	83	14	45	75	06	36
3	03	34	62	93	23	54	84	15	46	76	07	37
4	04	35	63	94	24	55	85	16	47	77	08	38
5	05	36	64	95	25	56	86	17	48	78	09	39
6	06	37	65	96	26	57	87	18	49	79	10	40
7	07	38	66	97	27	58	88	19	50	80	11	41
8	08	39	67	98	28	59	89	20	51	81	12	42
9	09	40	68	99	29	60	90	21	52	82	13	43
10	10	41	69	00	30	61	91	22	53	83	14	44
11	11	42	70	01	31	62	92	23	54	84	15	45
12	12	43	71	02	32	63	93	24	55	85	16	46
13	13	44	72	03	33	64	94	25	56	86	17	47
14	14	45	73	04	34	65	95	26	57	87	18	48
15	15	46	74	05	35	66	96	27	58	88	19	49
16	16	47	75	06	36	67	97	28	59	89	20	50
17	17	48	76	07	37	68	98	29	60	90	21	51
18	18	49	77	08	38	69	99	30	61	91	22	52
19	19	50	78	09	39	70	00	31	62	92	23	53
20	20	51	79	10	40	71	01	32	63	93	24	54
21	21	52	80	11	41	72	02	33	64	94	25	55
22	22	53	81	12	42	73	03	34	65	95	26	56
23	23	54	82	13	43	74	04	35	66	96	27	57
24	24	55	83	14	44	75	05	36	67	97	28	58
25	25	56	84	15	45	76	06	37	68	98	29	59
26	26	57	85	16	46	77	07	38	69	99	30	60
27	27	58	86	17	47	78	08	39	70	00	31	61
28	28	59	87	18	48	79	09	40	71	01	32	62
29	29	+	88	19	49	80	10	41	72	02	33	63
30	30		89	20	50	81	11	42	73	03	34	64
31	31		90		51		12	43		04		65

Add a day here for leap year.

Transferring Keys from SKL to ANCD

- From the Transferring SKL - Log into UAS
- Open the Keys tab and highlight the key to transfer
- (Note: If the key is expired, this will not affect the transfer)
- Select File; Transmit; Selected Keys
- Protocol and Active Mode should be set to DS-102
- And KYK-13. Select OK
- Select OK for Ready to Send Key.

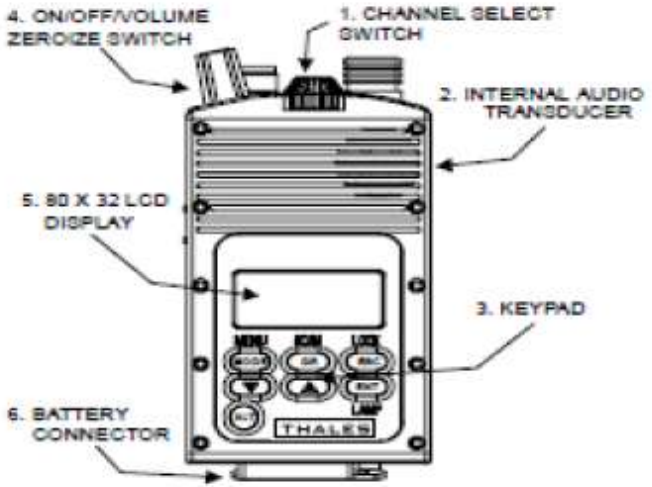
- From the Receiving ANCD – Press on/off button
- Select Appl; RADIO; Receive; Cfd
- KYK-13; TEK- Press RCV
- Ensure that your Cables are connected
- Enter SEG ID (ex: SEG 9)
- Skip Tag SEQ (Y)
- Another key (Y/N)
- Transfer Complete

Transferring Keys from SKL to SKL

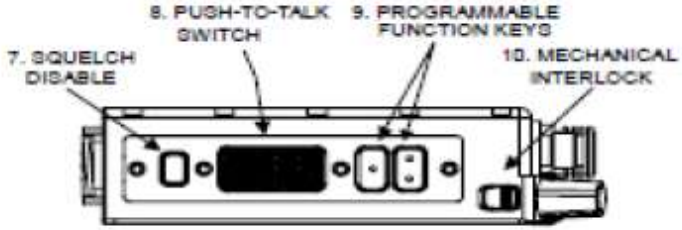
From the Transferring SKL - Log into UAS
Open the Keys tab and highlight the key to transfe
Note: If the key is expired, this will not affect the transfer)
Select File; Transmit; Load
Protocol and Active Mode should be set to DS-101
Select Issue for Mode and press OK

From the Receiving SKL – Log into UAS
Select File; Receive; Key
Ensure that your Cables are connected
Select DTD and press Next
Click Finish and press OK
Change Effective Date accordingly
Change Supersession Rate accordingly (ex: Monthly)
Change Crypto Period accordingly (ex: Weekly)
Select OK; OK
Transfer Complete

AN/PRC-148 Multiband Inter/Intra Team Radio (MBITR)



20 METER RADIO - FRONT VIEW



20 METER RADIO - PTT SIDE VIEW
2 METER VERSION IS SIMILAR

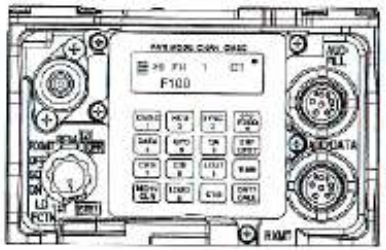
ANTENNAS

The radio has two antennas:
30-90 MHz Blade (1.2 meters in length) and 30-512 Whip (34 centimeters in length).

Loading FH Data and COMSEC in the SINCGARS Radio from the SKL

ON SKL

-Turn on your SKL fill device and login
-Select the Plats tab and highlight the current loadset (ex: ASIPS)
-Select File; Transfer; Load
-Hook up the fill cable to the fill port on the ASIPS RT
-Note: If the device claims there are expired keys, ignore and select YES to continue loading.
-Select ICOM transfer, check "Include Time," and press OK.
-Press Next; Note: You DO NOT need to check any of the "step by step" boxes



ON ASIP

-Using the FCTN Switch, turn your ASIPS RT to 'Z' to Zeroize the radio.
-RT will display GOOD.
-Note: Failing to Zeroize prior to loading new COMSEC may cause a RT FAIL
-Place FCTN switch to LD.
-Press Send on SKL.
-Press LOAD on ASIPS RT.

-Upon completion of loadset, the following must be configured and/or verified:

a. Julian Date/Time (use DAGR)
b. Net ID (ex. 168)
c. Power Level (ex. PA)
d. Antenna Connected
e. Speaker On
f. Handmic Connected
g. Conduct Radio Check

Install TACSAT Antenna

-Obtain correct azimuth and elevation from your S-6, Commo Card, or cut sheet

-Open case, remove antenna and setup

-Shoot azimuth using compass and align antenna

-Ensure you have line of site to sky, antenna will not work through vehicles, buildings, etc.

-Adjust elevation, tighten knobs

-Place sandbags or equivalent on legs to keep antenna in place

-Mark off 10 foot radius around antenna

-Connect RF cable to radio

-Check signal strength using loopback, adjust if necessary

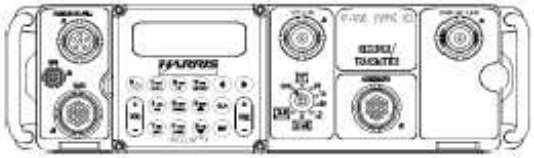
-Conduct radio check

Loading SC TACSAT TEK Fill Data for the AN/PRC-117F

Note: Loading the AN-PRC-117 to operate in CT for ANDVT utilizes the same TEK COMSEC fill as the current FM Key.

ON RADIO

-Turn your AN/PRC-117 Radio Function Switch to LD
-Use the up and down arrows to scroll through the options
-Highlight KYK-13 and press ENT on the Display
-Highlight ANDVT and press ENT on the Display
-Note: There are 25 slots available for TEK placement, but only the current key is needed for operation.
-Press ENT for TEK
-Note: If this is the first load after Zeroize, all slots are open.
-DO NOT press ENT until SKL is ready (read below)
-Using the keypad on the display, select the number of an available slot and press ENT. Slot 01 is default.



ON SKL

-Turn on your SKL fill device and login
-Select the keys tab and highlight the current TEK FM Key
-Select File; Transmit; Load
-Select DS-102 for Protocol
-Select KYK-13 for Activate Mode
-Hookup SKL to Audio/Data/Fill Port
-Select OK; OK; Transmit
-Press ENT on radio to except fill
-Select No for MORE FILL DATA and load is complete

Note: You must load this TEK AND the TSK (Orderwire key) for DAMA

Radiotelephone Procedures

Proword	Meaning
ALL AFTER	The portion of the message to which I have reference is all that which follows _____.
ALL BEFORE	The portion of the message to which I have reference is all that which precedes _____.
Authentication Is ___	The transmission authentication of this message is _____.
BREAK	I hereby indicate the separation of the text from other portions of the message.
CORRECT	You are correct, or what you have transmitted is correct.
CORRECTION	An error has been made in this transmission. Transmission will continue with the last word correctly transmitted.

Proword	Meaning
CORRECTION	An error has been made in this transmission. Transmission will continue with the last word correctly transmitted. An error has been made in this transmission (or message indicated). The correct version is _____. That which follow is a corrected version in answer to you request for verification.
DISREGARD THIS TRANSMISSION-OUT	This transmission is in error. Disregard it. (This proword shall not be used to cancel any message that has been completely transmitted and for which receipt or acknowledgment has been received.)
DO NOT ANSWER	Stations called are not to answer this call, receipt for this message, or other wise to transmit in connection with this transmission. When this proword is employed, the transmission shall be ended with the proword "OUT."
EXEMPT	The addressees immediately following are exempted from the collective call.
FIGURES	Numerals or numbers follow. (Optional)
FLASH	Precedence FLASH. Reserved for initial enemy contact reports on special emergency operational combat traffic originated by specifically designated high commanders of units directly affected. This traffic is to be SHORT reports of emergency situations of vital proportion. Handling is as fast as is humanly possible with an objective time of 10 minutes or less.
FROM	The originator of this message is indicated by the address designation immediately following.
GROUPS	This message contains the number of groups indicated.
IMMEDIATE	Precedence immediate. The precedence reserved for messages relating to situations which gravely affect the security of national/allied forces or populace, and which require immediate delivery.
INFO	The addressees immediately following are addressed for information.
I AUTHENTICATE	The group that follows it is the reply to your challenge to authenticate.
I READ BACK	The following is my response to your instructions to read back.
I SAY AGAIN	I am repeating transmission or portion indicated.
I SPELL	I shall spell the next word phonetically.
I VERIFY	That which follows has been verified at your request and is repeated. (To be used as a reply to verify.
MESSAGE	A message which requires recording is about to follow. (Transmitted immediately after the call.)
MORE TO FOLLOW	Transmitting station has additional traffic for the receiving station.
OUT	This is the end of my transmission to you and no answer is required or expected. (Since OVER and OUT have opposite meanings, they
OVER	This is the end of my transmission to you and a response is necessary. Go ahead; transmit.

Radiotelephone Procedures Cont.

Proword	Meaning
PRIORITY	Precedence PRIORITY. Reserved for important messages which must have precedence over routine traffic. This is the highest precedence which normally may be assigned to a message of administrative nature.
READ BACK	Repeat this entire transmission back to me exactly as received.
RELAY (TO)	Transmit this message to all addresses (or addresses immediately following this proword). The address component is mandatory when this proword is used.
ROGER	I have received your last transmission satisfactorily.
ROUTINE	Precedence ROUTINE. Reserved for all types of messages which are not of sufficient urgency to justify a higher precedence, but must be delivered to the addressee without delay.
SAY AGAIN	Repeat all of your last transmission. (Follower by identification data means "Repeat_____(portion indication).")
SERVICE	The message that follows is a service message.
SILENCE	"Cease Transmission Immediately." Silence will be maintained until lifted. (Transmissions imposing silence must be authenticated.)
SILENCE LIFTED	Silence is lifted. (When an authentication system is in force the transmission lifting silence is to be authenticated.)
SPEAK SLOWER	Your transmission is at too fast a speed. Reduce speed of transmission.

Proword	Meaning
THIS IS	This transmission is from the station whose designator immediately follows.
TIME	That which immediately follows is the time or date/time group of the message.
TO	The addressee(s) immediately following is (are) addressed for action.
UNKNOWN STATION	The identity of the station with whom I am attempting to establish communications is unknown.
VERIFY	Verify entire message (or portion indicated) with the originator and send correct version. (To be used only at the discretion of the addressee to which the questioned message was directed.)
WAIT	I must pause for a few seconds.
WAIT OUT	I must pause for longer than a few seconds.
WILCO	I have received your signal, understand it, and will comply. (To be used only by the addressee. Silence the meaning of ROGER is included in that of WILCO, the two prowords are never used together.)
WORD AFTER	The word of the message to which I have reference is that which follows.
WORD BEFORE	The word of the message to which I have reference is that which precedes _____.
WORDS TWICE	Your last transmission was incorrect. The correct version is _____.

COMPOSITE RISK MANAGEMENT

Risk Level	*Mission Effects*
Extremely High (E)	Mission failure if hazardous incidents occur in execution.
High (H)	Significantly degraded mission capabilities in terms of required mission standards. Not accomplishing all parts of the mission or not completing the mission to standard (if hazards occur during mission).
Moderate (M)	Expected degraded mission capabilities in terms of required mission standards. Reduced mission capability (if hazards occur during the mission).
Low (L)	Expected losses have little or no impact on mission success.

Table A-2. Risk levels and impact on mission execution.

A. Mission or Task:	**B. Date/Time Group**	**C: Date Prepared:**
Conduct a deliberate attack	**Begin:** 010035R May XX **End:** 010600R May XX	29 April XX

D. Prepared By: (Rank, Last Name, Duty Position) CPT Smith, Cdr

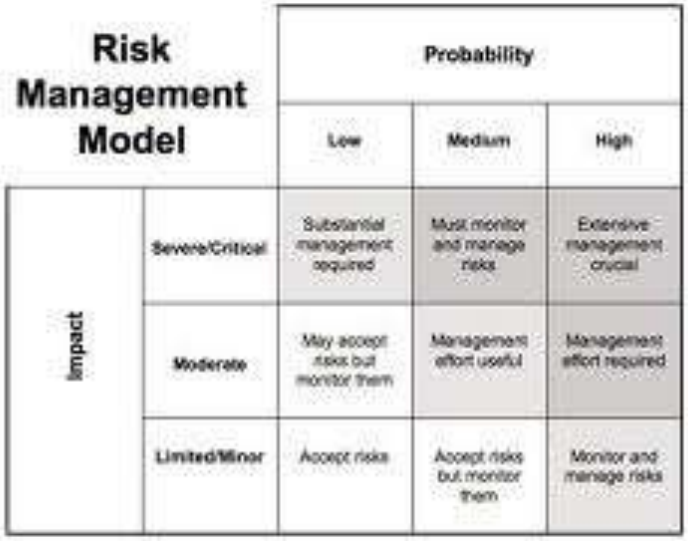
E. Task	F. Identify Hazard	G. Assess Hazard	H. Develop Controls	I. Determine Residual Risk	J. Implement Controls (How To)
Conduct obstacle breaching operations	Obstacles	High (H)	Develop and use obstacle reduction plan	Low (L)	Unit TSOP, OPORD, training handbook
	Inexperienced soldiers	High (H)	Additional training and supervision	Moderate (M)	Rehearsals, additional training
	Operating under limited visibility	Moderate (M)	Use NVDs, use IR markers on vehicles	Low (L)	Unit TSOP, OPORD
	Steep Cliffs	High (H)	Rehearse using climbing ropes	Moderate (M)	FM 3-97.6, Mountain Operations; TC 90-6-1, Mountaineering
	Insufficient planning time	High (H)	Plan and prepare concurrently	Moderate (M)	OPORD,Troop-leading procedures

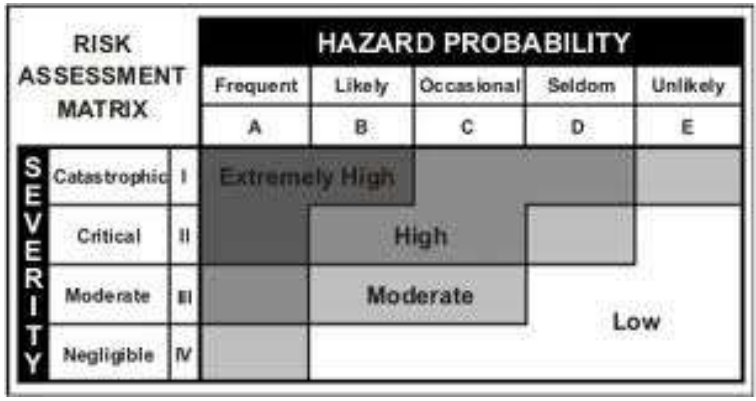
K. Determine overall mission/task risk level after controls are implemented (circle one)

LOW (L) **MODERATE (M)** HIGH (H) EXTREMELY HIGH (E)

EXAMPLE

Figure A-1. Example completed risk management worksheet.





RISK ASSESSMENT (3-90.2, APP D)

STEPS OF RISK ASSESSMENT

A. ID HAZARDS – LEADERS MUIST ID HAZARDS ASSOCIATED WITH ALL ASPECTS OF THE MISSION, PAYING CLOSE ATTENTION TO TMTET-C.

B. ASSESS HAZARDS TO DETERMINE RISK– ID HAZARD IMPACT ON EACH PART OF OPERATION AND DETERMINE RISK LEVELS (EH, H, M, L)

C. DEVELOP CONTROLS AND MAKE RISK DECISIONS

DEVELOP CONTROLS THAT WILL EITHER ELIMINATE HAZARDS

OR REDUCE RISK OF POTEMNNTIAL HAZARDOUS INCIDENTS.

MAKE RISK DECISIONS TO DETERMINE I^{F} CONTROLS ARE SUFFICIENT AND ACCEPTABLE AND WETHER TO ACCEPT RESIDUAL RISK.

D. IMPLEMENT CONTROLS—MOST IMPORTANT STEP! ENSURE CONTROLS ARE IMPLEMENTED INTO OPLAN'S, OPORD'S, SOP'S AND REHEARSALS. CONTROLS SHOULD BE CLEAR, SIMPLE, AND EXECUTABLE.

E. SUPERVISE AND EVALUATE—ASSESS AND IMPROVE RISK MITIGATION

Military Decision-Making Process	Risk Management Steps				
	Step 1 Identify Hazards	Step 2 Assess Hazards	Step 3 Develop Controls and Make Risk Decisions	Step 4 Implement Controls	Step 5 Supervise and Evaluate
Mission Receipt	X				
Mission Analysis	X	X			
COA Development	X	X	X		
COA Analysis	X	X	X		
COA Comparison			X		
COA Approval			X		
Orders Production				X	
Rehearsal[1]	X	X	X	X	X
Execution and Assessment[1]	X	X	X	X	X

[1] All boxes are marked to emphasize the continued use of the risk management process throughout the mission.

Table D-1. Risk management steps correlated with MDMP tasks.

SOURCES OF BATTLEFIELD RISK
MISSION
Duration of the operation.
Complexity or clarity of the plan. (Is the plan well developed and easily understood?)
Proximity and number of maneuvering units.
ENEMY
Knowledge of the enemy situation.
Enemy capabilities.
Availability of time and resources to conduct reconnaissance.
TERRAIN AND WEATHER
Visibility conditions, including light, dust, fog, and smoke.
Precipitation and its effects on mobility.
Extreme heat or cold.
Additional natural hazards (broken ground, steep inclines, and water obstacles).
TROOPS AND SUPPORT AVAILABLE
Equipment status.
Morale.
Experience units conducting the operation have working together.
Soldier and leader proficiency.
Soldier and leader rest situation.
Degree of acclimatization to environment.
Impact of new leaders and crewmembers.
TIME AVAILABLE
Time available for planning and rehearsals.
Time available to conduct the mission.
CIVIL CONSIDERATIONS
Applicable ROE and ROI.
Potential stability and support operations involving contact with civilians (such as NEOs, refugee or disaster assistance, or counterterrorism).
Potential for media contacts or inquiries.

Table D-2. Examples of potential hazards

Work/Rest and Water Consumption Table

Applies to average sized, heat-acclimated Soldier wearing ACU, hot weather. (See TB MED 507 for further guidance.)

Easy Work	Moderate Work	Hard Work
• Weapon Maintenance • Walking Hard Surface at 2.5 mph, < 30 lb Load • Marksmanship Training • Drill and Ceremony • Manual of Arms	• Walking Loose Sand at 2.5 mph, No Load • Walking Hard Surface at 3.5 mph, < 40 lb Load • Calisthenics • Patrolling • Individual Movement Techniques, i.e., Low Crawl or High Crawl • Defensive Position Construction	• Walking Hard Surface at 3.5 mph, ≥ 40 lb Load • Walking Loose Sand at 2.5 mph with Load • Field Assaults

Heat Category	WBGT Index, F°	Easy Work		Moderate Work		Hard Work	
		Work/Rest (min)	*Water Intake (qt/hr)*	*Work/Rest (min)*	*Water Intake (qt/hr)*	*Work/Rest (min)*	*Water Intake (qt/hr)*
1	78° - 81.9°	NL	½	NL	¾	40/20 min	¾
2 (green)	82° - 84.9°	NL	½	50/10 min	¾	30/30 min	1
3 (yellow)	85° - 87.9°	NL	¾	40/20 min	¾	30/30 min	1
4 (red)	88° - 89.9°	NL	¾	30/30 min	¾	20/40 min	1
5 (black)	> 90°	50/10 min	1	20/40 min	1	10/50 min	1

- The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hrs of work in the specified heat category. Fluid needs can vary based on individual differences (± ¼ qt/hr) and exposure to full sun or full shade (± ¼ qt/hr).
- **NL** = no limit to work time per hr.
- **Rest** = minimal physical activity (sitting or standing) accomplished in shade if possible.
- ***CAUTION: Hourly fluid intake should not exceed 1½ qts.***

  Daily fluid intake should not exceed 12 qts.
- If wearing body armor, add **5°F** to WBGT index in humid climates.
- If doing Easy Work and wearing NBC (MOPP 4) clothing, add **10°F** to WBGT index.
- If doing Moderate or Hard Work and wearing NBC (MOPP 4) clothing, add **20°F** to WBGT index.

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IOP-033-0811

SLEEP SCHEDULE FACTORS

Factor	*Effect*
Timing of sleep period.	· Because of the body's natural rhythms (called "circadian" rhythms), the best quality and longest duration sleep is obtained during nighttime hours (2300-0700). · These rhythms also make daytime sleep more difficult and less restorative, even in sleep-deprived Soldiers. · The ability to fall and stay asleep is impaired when bedtime is shifted earlier (such as from 2300 to 2100 hours). · This is why eastward travel across time zones initially produces greater deficits in alertness and performance than westward travel.
Duration of sleep period.	· **IDEAL** sleep period equals 7 to 8 hours of continuous and uninterrupted nighttime sleep each and every night. · **MINIMUM** sleep period—there is no minimum sleep period. Anything less than 7 to 8 hours per 24 hours will result in some level of performance degradation.
Napping.	· Although it is preferable to get all sleep over one sustained 7 to 8 hour period, sleep can be divided into two or more shorter periods to help the Soldier obtain 7 to 8 hours per 24 hours. Example: 0100-0700 hours plus nap 1300-1500 hours. · Good nap zones (when sleep onset and maintenance is easiest) occur in early morning, early afternoon, and nighttime hours. · Poor nap zones (when sleep initiation and maintenance is difficult) occur in late morning and early evening hours when the body's rhythms most strongly promote alertness. · Sleep and *rest* are not the same. While *resting* may briefly improve the way the Soldier feels, it does not restore performance the way sleep does. · There is no such thing as *too much sleep*—mental performance and alertness always benefit from sleep. · Napping and sleeping when off duty are not signs of laziness or weakness. They are indicative of foresight, planning, and effective human resource management.
Prioritize sleep need by task.	· **TOP PRIORITY** is leaders making decisions critical to mission success and unit survival. Adequate sleep enhances both the speed and accuracy of decisionmaking. · **SECOND PRIORITY** is Soldiers who have guard duty, who are required to perform tedious tasks such as monitoring equipment for extended periods, and those who judge and evaluate information. · **THIRD PRIORITY** is Soldiers performing duties involving only physical work.
Individual differences.	· Most Soldiers need 7 to 8 hours of sleep every 24 hours to maintain optimal performance. · Most leaders and Soldiers underestimate their own total daily sleep need and fail to recognize the effects that chronic sleep loss has on their own performance.

SLEEP ENVIRONMENT RELATED FACTORS

Factor	***Effect***
Ambient noise.	· A quiet area away from intermittent noises/disruptions is **IDEAL**. · Soldiers can use earplugs to block intermittent noises. · Continuous, monotonic noise (such as a fan or *white noise*) also can be helpful to mask other environmental noises.
Ambient light.	· A completely darkened room is **IDEAL**. · For Soldiers trying to sleep during daytime hours, darken the sleep area to the extent possible. · Sleep mask/eye patches should be used if sleep area cannot be darkened.
Ambient temperature.	· Even small deviations above or below comfort zone will disrupt sleep. · Extra clothing/blankets should be used in cold environments. · Fans in hot environments (fan can double as source of white noise to mask ambient noise) should be used.
Stimulants (caffeine, nicotine).	· Caffeine or nicotine use within 4 to 6 hours of a sleep period will disrupt sleep and effectively reduce sleep duration. · Soldier may not be aware of these disruptive effects.
Prescription sleep-inducing agents (such as Ambien®, Lunesta®, and Restoril®).	· Sleep inducers severely impair Soldiers' ability to detect and respond to threats. · Sleep inducers should not be taken in harsh (for example, excessively cold) and/or unprotected environments. · Soldiers should have *nonwork* time of at least 8 hours after taking a prescribed sleep inducer.
Things that do not improve or increase sleep.	· Foods/diet—no particular type of diet or food improves sleep, but hunger and thirst may disrupt sleep. · Alcohol induces drowsiness but actually makes sleep worse and reduces the duration of sleep. · Sominex®, Nytol®, melatonin, and other over-the-counter sleep aids induce drowsiness but typically have little effect on sleep duration and are, therefore, of limited usefulness. · Relaxation tapes, music, and so forth may help induce drowsiness but they do not improve sleep.

SLEEP DEPRIVATION

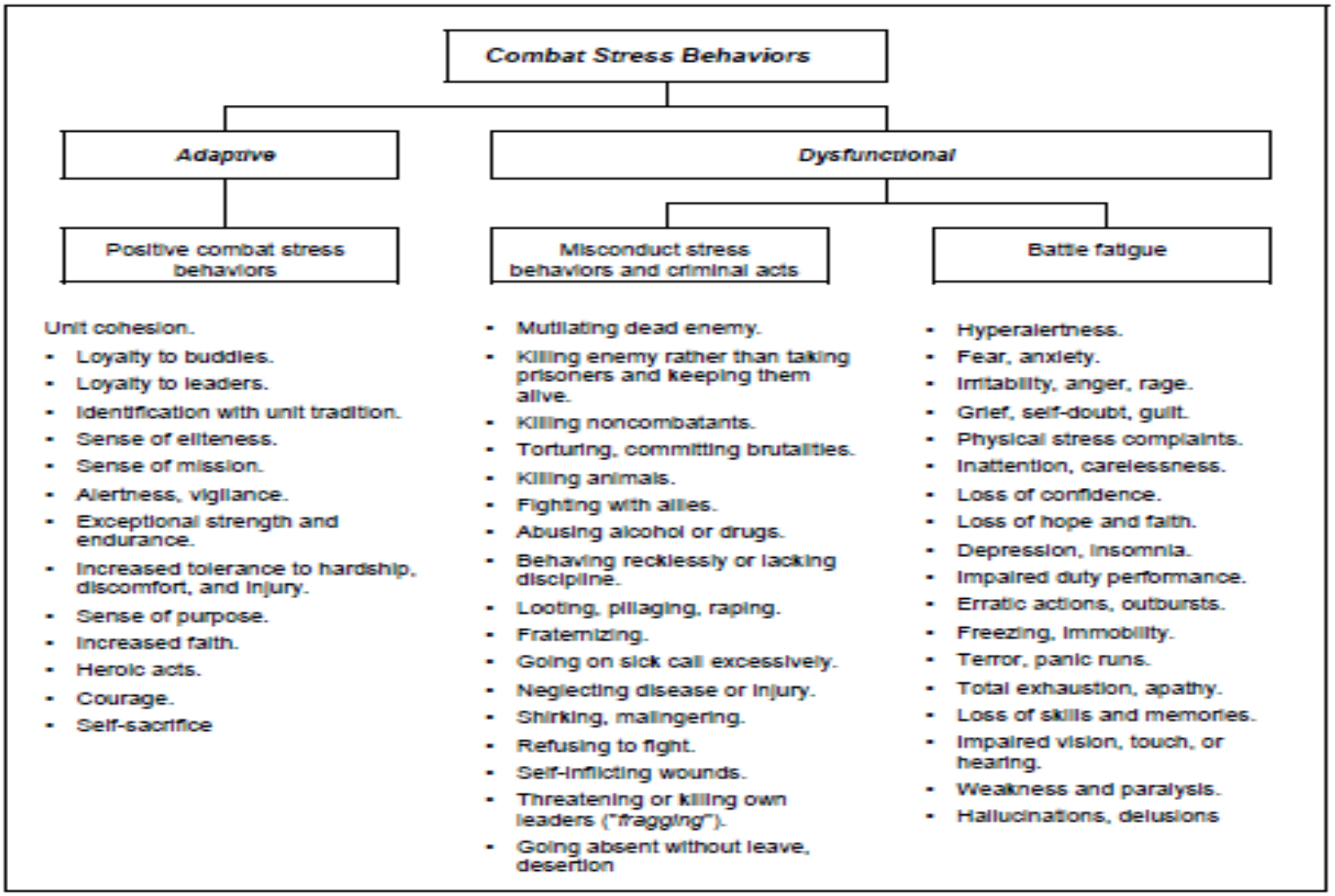
Effects of Sleep Loss

After 24 Hours	A deterioration in performance of tasks that are inadequately or newly learned, that are monotonous, or that require vigilance.
After 36 Hours	A marked deterioration in ability to register and understand information.
After 72 Hours	Performance on most tasks will be about 50 percent of normal.
3 To 4 Days	The limit for intensive work, including mental and physical elements. Visual *illus*ions are likely at this stage or earlier, especially in CBRN.
Between 0300 and 0600 Hours	Performance is at its lowest ebb.

Indicators of Sleep Deprivation and Fatigue

Physical Changes	ŸBody swaying when standing. ŸVacant stares. ŸPale skin. ŸSlurred speech. ŸBloodshot eyes.
Mood Changes	ŸLess energetic, alert, and cheerful. ŸLoss of interest in surroundings. ŸPossible depressed mood or apathetic and more irritable.
Early Morning Problems	ŸRequires more effort to do a task in the morning than in the afternoon, especially between 0300 and 0600.
Communication Problems	ŸUnable to carry on a conversation. ŸForgetfulness. ŸDifficulty in speaking clearly.
Difficulty In Processing Information	ŸSlow comprehension and perception. ŸDifficulty in accessing simple situations. ŸRequires more time to understand information.
Impaired Attention Span	ŸDecreased vigilance. ŸFailure to complete routines. ŸReduced attention span. ŸShort-term memory loss. ŸInability to concentrate.

COMBAT STRESS BEHAVIORS



9 LINE MEDEVAC REQUEST FORM

Line	Item	Description
1	Location of Pickup Site	10 Digit Grid
2	Radio Freq, Call Sign, Suffix	The call sign and suffix of person to be contacted at the pickup site
3	Number of Patients by Precedence	Report only applicable: A = Urgent, B = Urgent-Surg, C = Priority, D = Routine, E = Convenience (If 2 or more categories reported in ame request, insert the word "break" btwn each category.
4	Special Equipment Required	A = None, B = Hoist, C = Extraction equipment, D = Ventilator
5	Number of Patients by Type	Report only applicable information: L + # of PNT = Litter, A + # of PNT = Amblu (sitting) If requeting for both types, insert the work "break" btwn each category.
6	Security of Pickup Site (Wartime)	N = No enemy troops in area, P = Possibly enemy troops in area (approach with caution), E = Enemy troops in area (approach with caution), X = Enemy troops in area (armed escort required)
6	Number and Type of Wound, Injury, or Illness (Peacetime)	Specific information regarding patient wounds by type (gunshot or shrapnel). Report serious bleeding, along with patient blood type if known.
7	Method of Marking Pickup Site	A = Panels, B = Pyrotechnic signal, C = Smoke Signal, D = None, E = Other
8	Patient Nationality and Status	Number of patients in each category need not be transmitted. A = US military, B = US civilian, C = Non-US military, D = Non-US civilian, E = EPW
9	NBC Contamination (Wartime)	Include this line only when applicable. N = Nuclear, B = Biological, C = Chemical
9	Terrain Description (Peacetime)	Include details of terrain features in and around proposed landing site. If possible, describe the relationship of site to a prominent terrain feature (lake, mountain, tower).