



THE FOG OF WAR: RISK & UNCERTAINTY IN MILITARY OPERATIONS

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Agenda

- ① Risk & Uncertainty in Military Operations
- ① US Army definition of risk & uncertainty
- ① Army Risk Mitigation
 - Composite Risk Management
- ① Army Uncertainty Mitigation
 - Information-Focused Solution
 - Action-Focused Solution
- ① Conclusion

Risk & Uncertainty In Military Operations



Carl von Clausewitz, 1780 - 1831

"War is the realm of uncertainty; three-quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty..."

Clausewitz, Carl von. *On War*.

US Army Definition of Risk

The US Army separates risk and uncertainty.

Risk → **Known hazards**

- ⦿ All hazards, tactical or accidental, that have the potential to injure or kill personnel, damage or destroy equipment, or otherwise impact mission effectiveness.

US Army FM 5-19: *Composite Risk Management*. pg 1-1.

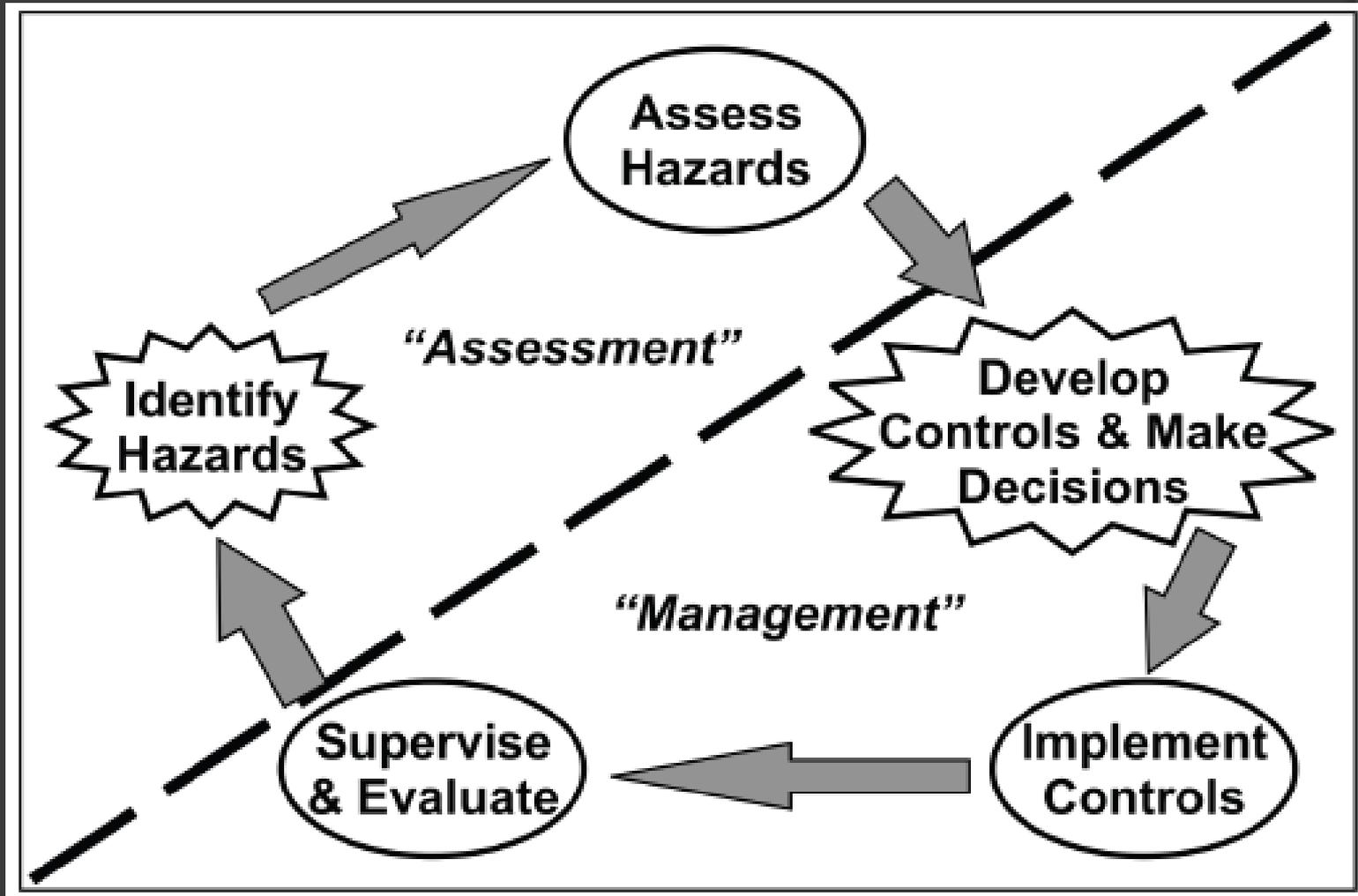
Uncertainty → **Unknown or ambiguous hazards**

- ⦿ Unpredictability and ambiguity stemming from the complex and highly interactive nature of military operations, further complicated by inherent human interaction and a thinking enemy.

(Composite definition based on US Army FM 6-0: *Mission Command*. pg 1-10.)

Risk Mitigation: Composite Risk Management

The primary decision-making process for identifying hazards and controlling risks across the full spectrum of Army missions, functions, operations, and activities.



Uncertainty Mitigation

1. Information-focused Solution

- Reduces uncertainty by collecting more and better data, increasing information-processing capability, and disseminating relevant information.

US Army FM 6-0: *Mission Command*. pg 1-11.

- Counter Intelligence & Military Deception
- Most Likely Enemy Course of Action
- Most Dangerous Enemy Course of Action
- “Red Teaming” (Devil’s Advocate)

2. Action-focused Solution

- Focuses on designing, training, and maintaining organizations capable of managing and coping with uncertainty as part of normal operations.

US Army FM 6-0: *Mission Command*. pg 1-11.

Information-Focused Solution



Sun Tzu, 544 BC – 496 BC

“Thus, what enables the wise sovereign and the good general to strike and conquer, and achieve things beyond the reach of ordinary men, is foreknowledge [intelligence]. Now this foreknowledge cannot be elicited from spirits; it cannot be obtained inductively from experience, nor by any deductive calculation.”

Sun Tzu. *The Art of War*.

Information Superiority

Information Management

- The provision of relevant information to the right person at the right time in a usable form to facilitate situational understanding and decision making.
- Information is collected, processed, stored, displayed, and disseminated.

US Army FM 6-0: *Mission Command*. pg 3-10.

Relevant Information

- All information of importance to the commander and staff in the exercise of command and control.
- Facilitates collaborative planning and helps achieve shared situational understanding.

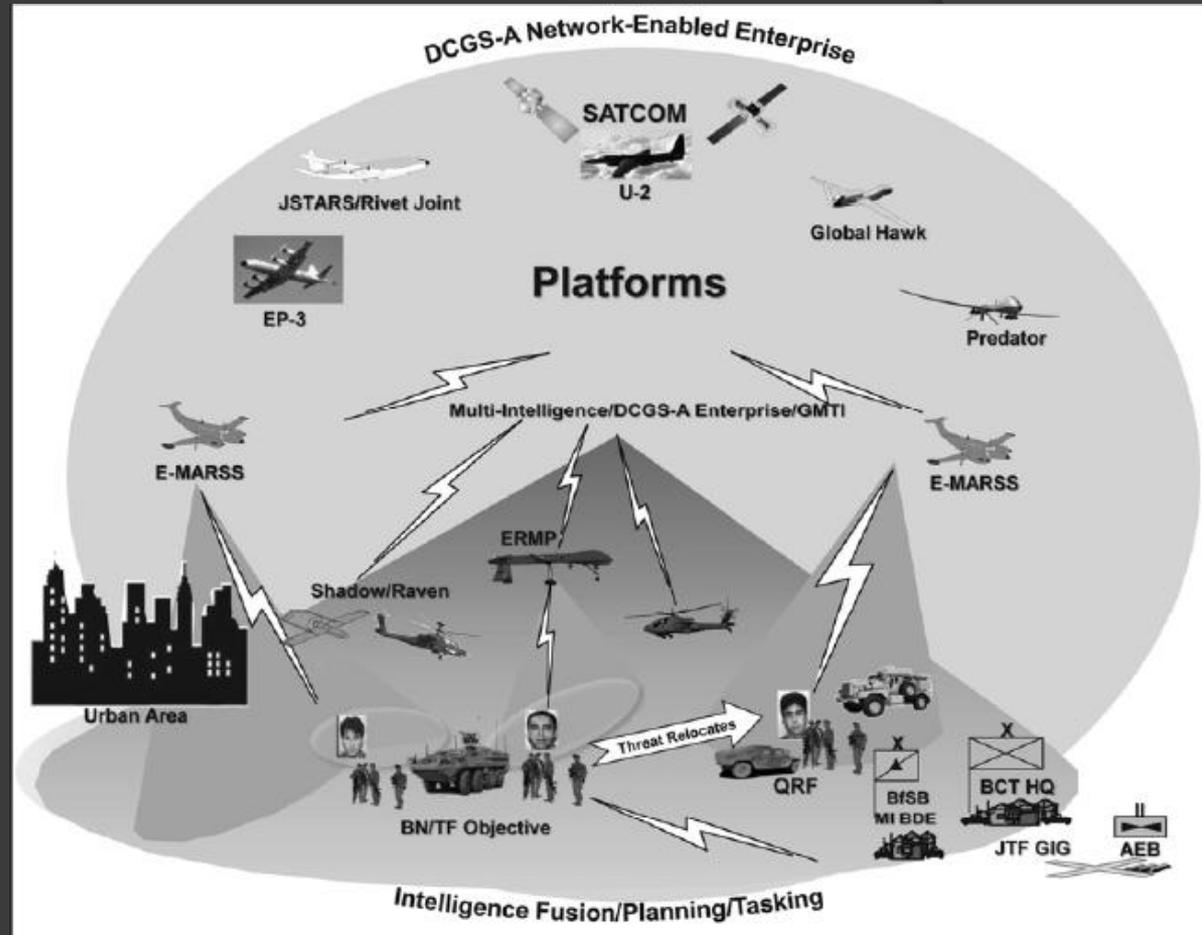
US Army FM 6-0: *Mission Command*. Pg 3-5.

US Army FM 6-0: *Mission Command*. Pg 3-8.

Information Management:

Collect

To continuously acquire relevant information by any means.



US Army FM 2-0: *Intelligence*. pg 1-21.

Information-push system:

Collects information by pushing it from the source to the user, by schedule or availability.

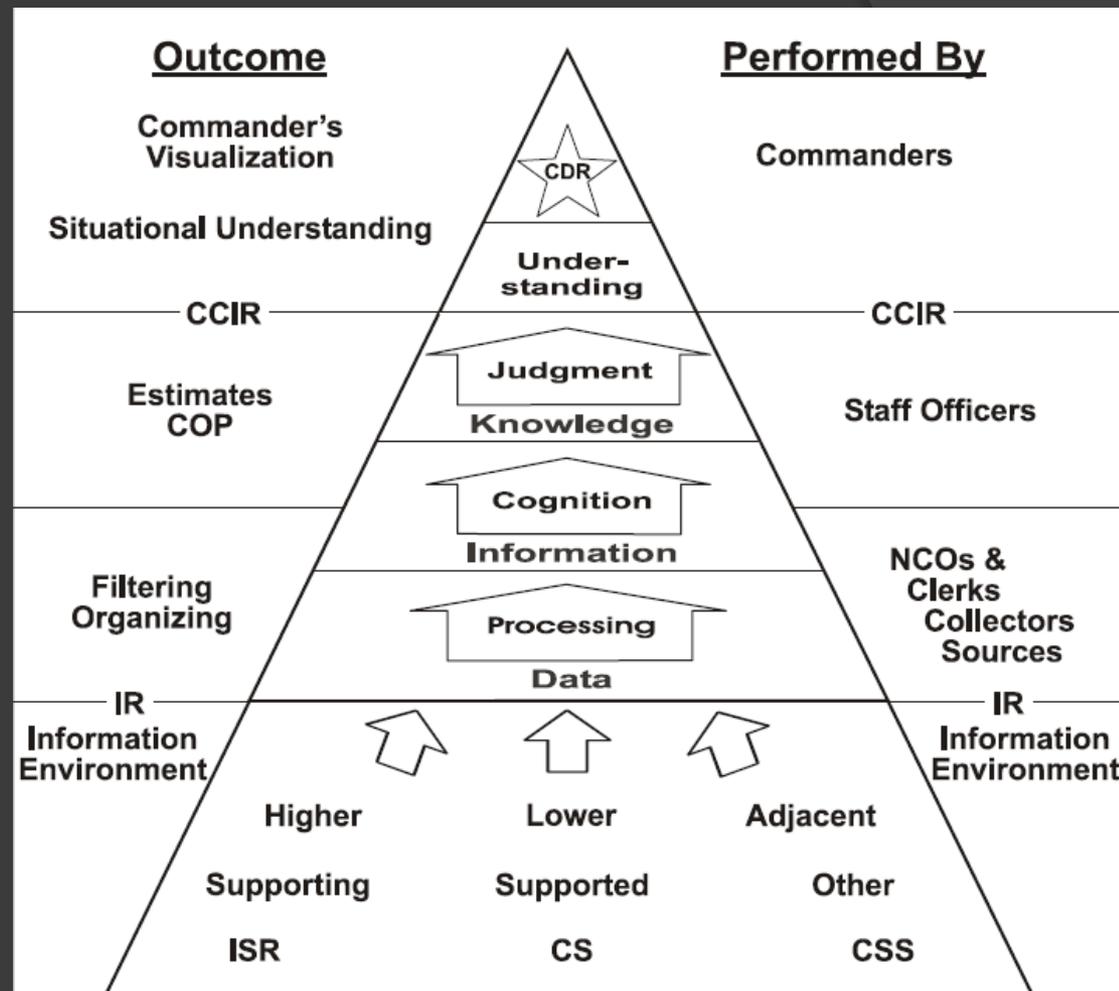
Information-pull system:

Users request information as needed.

Information Management:

Process

Adds meaning to data and information through progressively higher-level and complex cognitive methods.



US Army FM 6-0: *Mission Command*. Pg 3-14.

Filter → Fuse → Prioritize → Understand

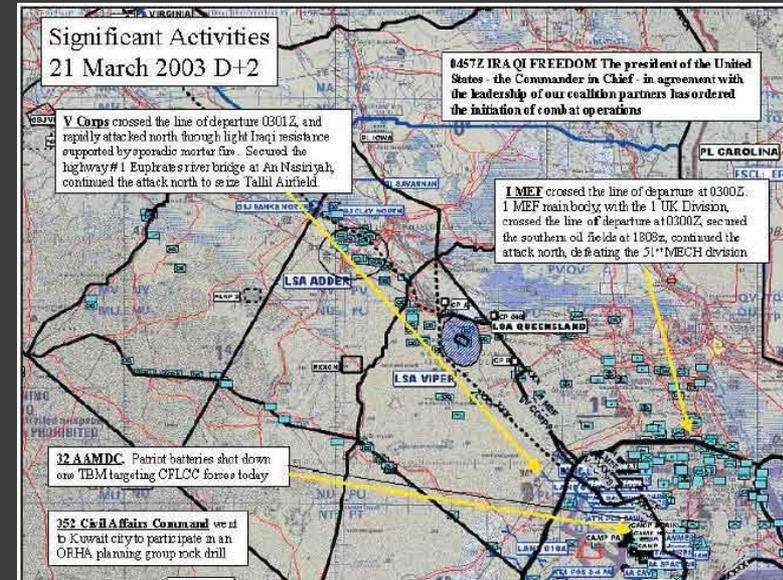
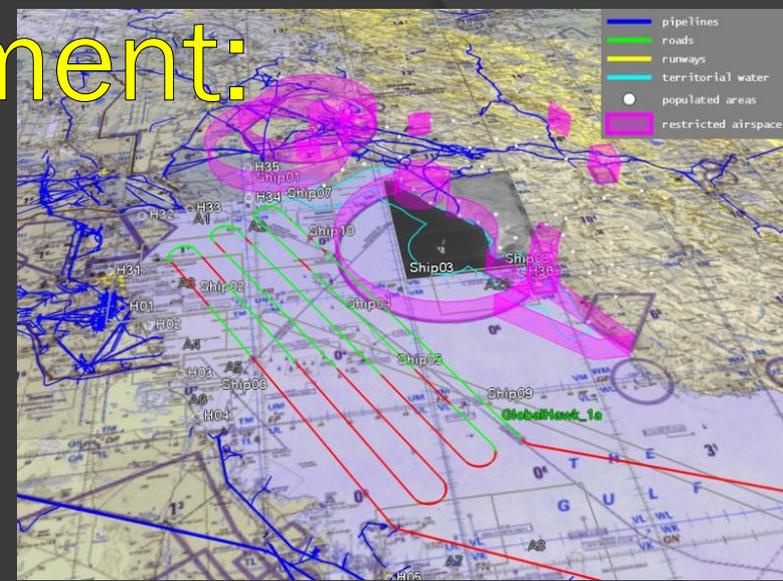
Information Management: *Store*



To retain relevant information in any form, for orderly, timely retrieval and documentation, until it is needed for exercising command and control.

Flexible common databases with sorting, storage, and query capability are preferred for information storage.

Information Management: Display



To represent relevant information in a usable, easily understood audio or visual form tailored to the needs of the user. (Graphic, written, or verbal narrative.)

Information Management: Disseminate

CLASSIFICATION
OPORD NO.
REFERENCES. List any maps or documents needed to understand the order or that were used in the preparation of the order.
TIME ZONE USED THROUGHOUT THE ORDER:
TASK ORGANIZATION:
1. SITUATION
a. Enemy forces
(1) Situation (enemy, weather, and terrain)
(2) Capabilities
(3) Probable course of action
b. Friendly forces
(1) Mission of your parent unit
(2) Mission of unit providing your support
(3) Mission and/or route of adjacent units that may affect your operation
c. Attachments and detachments
2. MISSION
Who, what, when, where (coordinates), and why
3. EXECUTION
a. Concept of operation. The overall plan (scheme of maneuver) for the unit and plan for fire support (refer to annex).
b. Commander's intent. How commander views the upcoming operations.
c. Sub-unit missions. For sections, teams and individuals.
d. Coordinating instructions
(1) Time schedule
(2) Formations and order of movement
(3) Route (primary and alternate)
(4) Movement within friendly front lines
(5) Rally points and actions at rally points
(6) Actions on enemy contact at danger areas and at the objective
(7) Nuclear, biological, and chemical (NBC) safety instructions and mission-oriented protective posture (MOPP) level and Priority intelligence requirements (PIR)
(8) Fire support (if not already discussed)
(9) Rehearsal and inspections
(10) Debriefing (including essential elements of information (EEI), other intelligence requirements (OIR), time, and place
(11) Annexes (other actions may be covered separately)
CLASSIFICATION

Figure A-2. Format for an operation order.



To communicate relevant information of any kind from one person or place to another in a usable form by any means to improve understanding or to initiate or govern action.

Broadcast or point-to-point dissemination.

US Army FM 6-0: *Mission Command*. Pg 3-16.

Military Deception

Actions conducted to mislead an enemy commander

- Provokes an enemy commander to hesitate or commit a serious mistake
- Introduces uncertainty into the enemy's estimate of the situation
- Requires integration into the overall operation
- Requires a reasonably accurate assessment of the enemy's expectations

US Army FM 3-0: *Operations*. Pg 7-8.

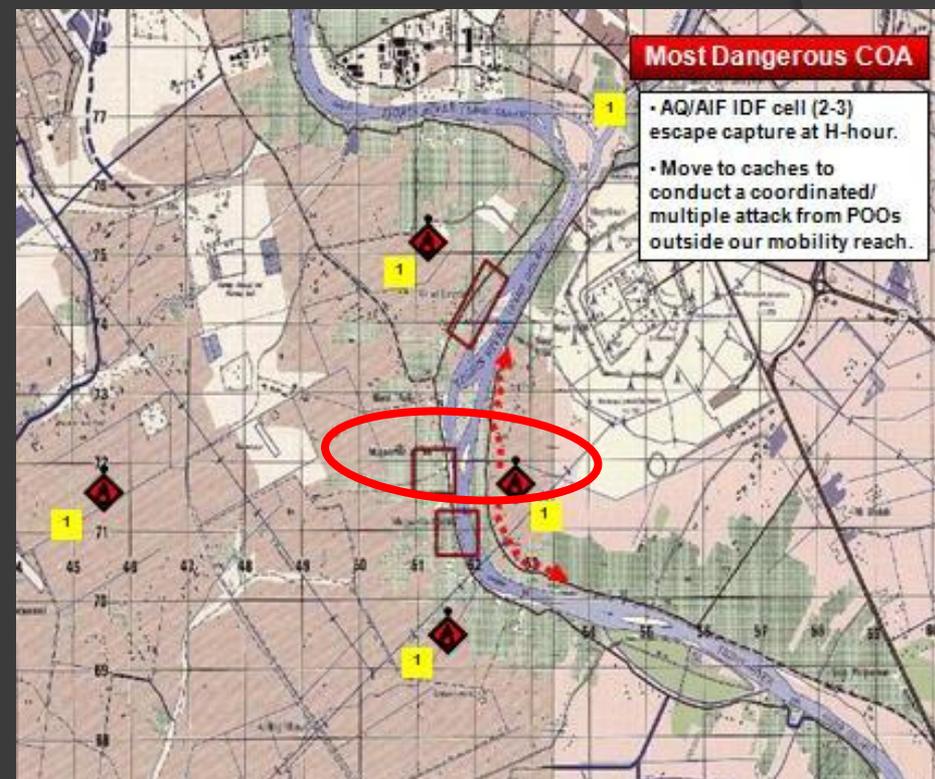
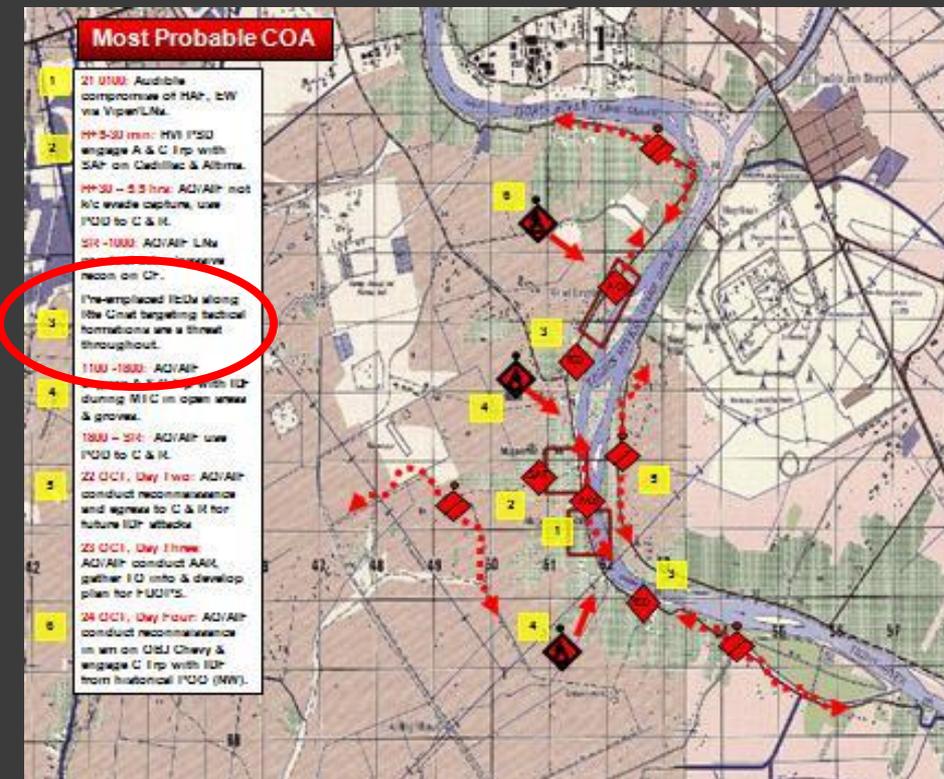


Forecasting Enemy & Civilian Action

At a minimum every plan considers and addresses the most likely scenario and the worst case scenario:

- Most Likely Enemy Course of Action

- Most Dangerous Enemy Course of Action



Red Teaming

A structured, iterative process that provides an independent capability to challenge plans in the context of the operational environment and from our partners' and adversaries' perspectives.

Red Teams are tasked to:

- Broaden understanding.
- Assist in framing problems and defining end state.
- Challenge assumptions.
- Ensure adversary and other perspectives are considered.
- Aid in identifying friendly and enemy vulnerabilities and opportunities.
- Anticipate cultural perceptions.
- Conduct independent critical reviews and analyses.



US Army FM 5-0: *The Operations Process*. Pg 1-7.

Action-Focused Solution: Mission Command



Helmuth von Moltke, 1800-1891

“...no plan of operations extends with any degree of certainty beyond the first encounter with the main enemy force...”

“The advantage which a commander thinks he can attain through continued personal intervention is largely illusory. By engaging in it he assumes a task that really belongs to others, whose effectiveness he thus destroys. He also multiplies his own tasks to a point where he can no longer fulfill the whole of them.”

von Moltke, Helmuth. *Essays, speeches, and memoirs of Field Marshal Count Helmuth von Moltke.*

Action-Focused Solution

Acknowledges some uncertainty is unavoidable.

Focuses on designing, training, and maintaining organizations capable of managing and coping with uncertainty as part of normal operations.

US Army FM 6-0: *Mission Command*. Pg 1-11.

Mission Command

- Decentralized execution based on mission orders.
- Encourages calculated risks to create opportunities.

US Army FM 6-0: *Mission Command*. Pg 1-17.

Mission Command

Leaders exercise disciplined initiative within the commander's intent to accomplish missions.

Requires trust and mutual understanding.

Mission command rests on four elements:

- Commander's intent.
- Subordinates' initiative.
- Mission orders.
- Resource allocation.

Sacrifices direct control for initiative and action versus passivity and ponderous decision-making.

<ul style="list-style-type: none"> • Probabilistic • Unpredictable 	Assumes war is	<ul style="list-style-type: none"> • Deterministic • Predictable
<ul style="list-style-type: none"> • Disorder • Uncertainty 	Accepts	<ul style="list-style-type: none"> • Order • Certainty
<ul style="list-style-type: none"> • Decentralization • Spontaneity • Informality • Loose rein • Self-discipline • Initiative • Cooperation • Acceptable decisions faster • Ability all echelons • Higher tempo 	Tends to lead to	<ul style="list-style-type: none"> • Centralization • Coercion • Formality • Tight rein • Imposed discipline • Obedience • Compliance • Optimal decisions, but later • Ability focused at the top
<ul style="list-style-type: none"> • Implicit • Vertical and horizontal • Interactive 	Communication types used	<ul style="list-style-type: none"> • Explicit • Vertical • Linear
<ul style="list-style-type: none"> • Organic • Ad hoc 	Organization types fostered	<ul style="list-style-type: none"> • Hierarchic • Bureaucratic
<ul style="list-style-type: none"> • Delegating • Transformational 	Leadership styles encouraged	<ul style="list-style-type: none"> • Directing • Transactional
<ul style="list-style-type: none"> • Art of war • Conduct of operations 	Appropriate to	<ul style="list-style-type: none"> • Science of war • Technical/procedural tasks

US Army FM 6-0: *Mission Command*. Pg 1-15.

Commander's Intent

Describe the boundaries of initiative while maintaining unity of effort.

- Purpose
- Decisive point
- Key Tasks
- Desired End State



A clear, concise statement of what the force must do and the conditions the force must establish in order to achieve the desired end state.

US Army FM 3-0: *Operations*. Pg 5-10.

Subordinate's Initiative

Subordinates are required, not just permitted, to exercise initiative when an opportunity or threat presents itself.



The responsibility for deciding and initiating independent actions when the concept of operations no longer applies or when an unanticipated opportunity leading to achieving the commander's intent presents itself.

Training

Ambiguity and uncertainty are integrated into training.

Flexibility is encouraged

- ⦿ An “approved solution” is not rigidly enforced, but success is defined by achieving the desired outcome.
- ⦿ Doctrine provides a framework that is adjusted as necessary.



Conclusion

Risk → Known hazards

Identified, Assessed, Controlled, Evaluated

Uncertainty → Unknown or ambiguous hazards

1. Information-focused Solution

- Information Dominance

2. Action-focused Solution

- Flexible organizations

- Mission Command

- Sacrifices direct control for initiative and action

QUESTIONS?



ADDITIONAL SLIDES
RISK & UNCERTAINTY IN MILITARY OPERATIONS

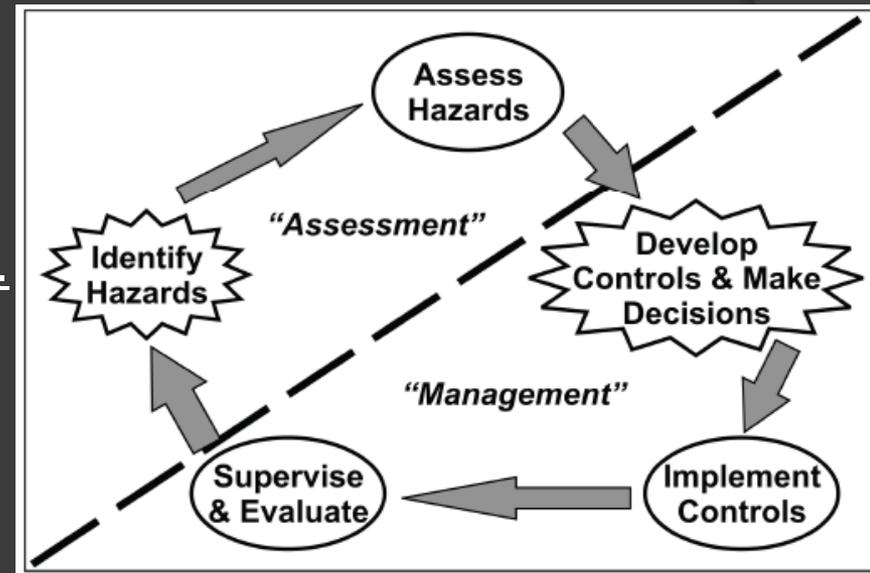
My Background

- Academic:
 - MBA, Finance (Investments) and Management, Duke University, 2009
 - BS, Systems Engineering, USMA, 1999
- Branch: Infantry
- Military Career:
 - Instructor of Economics & Finance, West Point
 - Airborne Reconnaissance Troop Commander
 - Airborne Rifle Company Commander
 - Assistant Operations Officer
 - Platoon Tactical Trainer/Senior Walker, US Army Ranger School
 - Battalion Personnel Officer
 - Support Platoon Leader
 - Company Executive Officer
 - Air Assault Rifle Platoon Leader
- Deployments
 - OIF – “Surge” - Baghdad, Iraq
 - OIF – CJSOTF – OCFI, Iraq
 - Operation All American Assist – New Orleans, LA (Katrina)
 - Operation Joint Guardian – Kosovo

Risk Mitigation: Composite Risk Management

The primary decision-making process for identifying hazards and controlling risks across the full spectrum of Army missions, functions, operations, and activities.

1. Identify hazards.
2. Assess hazards to determine risk.
 - Assess probability of occurrence
 - Estimate severity of an occurrence
 - Determine resultant level of risk
3. Develop controls & make risk decisions.
 - Develop Controls
 - Find control measures
 - Reassess risk with controls applied
 - Make risk decisions
4. Implement controls.
5. Supervise and evaluate.
 - Supervise controls
 - Evaluate efficacy of controls



US Army FM 5-19: *Composite Risk Management*.

Example Tactical Risk Management

COMPOSITE RISK MANAGEMENT WORKSHEET							
For use of this form, see FM 5-19; the proponent agency is TRADOC.							
1. MSN/TASK DELIVERY OF ARTILLERY FIRES		2a. DTG BEGIN 240400FEBXX		2b. DTG END UNKNOWN		3. DATE PREPARED (YYYYMMDD) XXXX0221	
4. PREPARED BY							
a. LAST NAME Black			b. RANK CPT		c. POSITION BATTERY CDR		
5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?
	Enemy ops - Obstacles	E	Request engineer support Pre-mission briefing with engineers to identify marking of obstacle lanes	H	Coordination with higher command FRAGO	Direct supervision	
	Inexperienced personnel - New eq/poor fire procedures	E	Rehearse procedures of electronic eq-and manual fire direction drills Practice procedures for tactical displacement	H	FRAGO Crew drills	Direct supervision	
	Inexperienced personnel - Poor reaction to enemy counterfire	E	Practice procedures for tactical displacement	H	Rehearsals	Direct supervision	
	Adverse conditions - Eq damage/failure	H	Secure exposed equipment Ensure FMCS for extreme conditions enforced Request additional stockage of electronic LRUs for PLL	M	FRAGO TM-10, OPOD Coordination with higher command	Spot check Direct supervision Direct supervision	
	Adverse conditions - Limited visibility	H	Personnel wear protective goggles Decrease vehicle speed and intervals	M	OPOD OPOD	Spot check Spot check	
	Continuous ops - Soldier fatigue	H	Plenty of rest before SP Minimum staffing (rest) when the tactical situation permits Forward physical condition reports to HQ	M	Verbal Order FRAGO SITREP	Spot check Direct supervision	
Additional space for entries in Items 5 through 11 is provided on Page 2.							
13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED (Check one)							
<input type="checkbox"/> LOW <input type="checkbox"/> MODERATE <input checked="" type="checkbox"/> HIGH <input type="checkbox"/> EXTREMELY HIGH							
14. RISK DECISION AUTHORITY							
a. LAST NAME		b. RANK		c. DUTY POSITION		d. SIGNATURE	

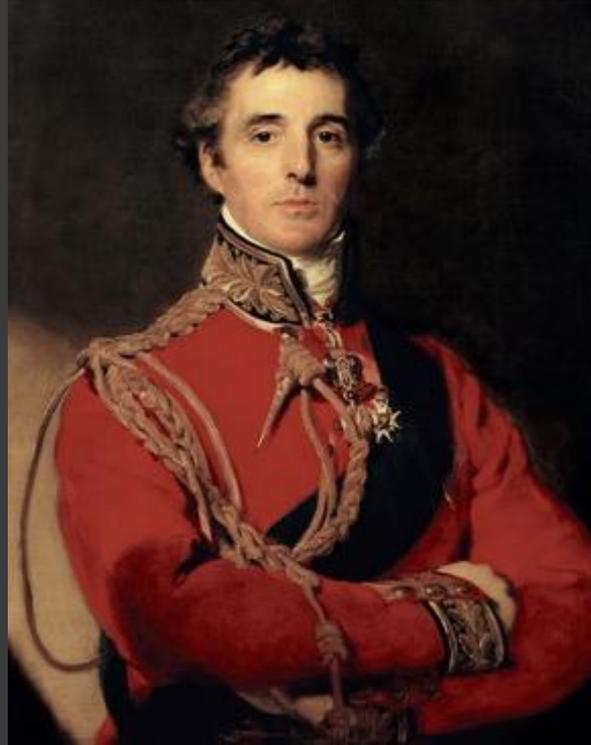
Example Training Risk Management

3 Panther Risk Management Worksheet

Page 1 of 6

1. MSN / TSK: PLT LFX Range 68/ OP 9		2. DTG BEGIN: 11 Apr 05 END: 19 Apr 05		3. DATE PREPARED: 1 Mar 05	
4. PREPARED BY: MAJ Smith, 3-505 th PIR Operations Officer (Rank/Last Name/Duty Position)					
5. HAZARDS	6. INITIAL RISK LEVEL	7. CONTROLS	8. HOW TO IMPLEMENT	9. HOW TO SUPERVISE	10. RESIDUAL RISK LEVEL
<p>AMMUNITION: Mix blank and ball ammo, fire at ASP</p> <p>SBF: Fratricide firing w/in MSD, Injury due to malfunction, injury due to signals (pyro)</p>	<p>M</p> <p>H</p>	<p>AMMUNITION: PSG confirms all blank adaptors removed and pax checked for blank ammo prior to issuing ball ammunition, fire extinguisher charged at ASP, no smoking within 50' Blank and Live Ammunition stored and issued in separate locations. ASPs separated by wire. Lights available for night issue.</p> <p>SBF: SBF Rehearsals blank day/night, ID L/R limits, rehearse immediate corrective actions for malfunction, clearly marked maneuver element, practice employing signals, rehearse CASEVAC plan during fire/TEWT, OC with commo designated for each gun. Pax receive min of 5 hours rest prior to executing range. Soldiers wear IBA w/ SAPI Maintain 15 degrees from maneuver</p>	<p>PCIs/PCCs Prior to execution, White light check at night. Soldiers load own magazines; confirm blank or live. Ammo NCOIC separates live ammo from blk ammo at ASP Brass and ammo check after each iteration.</p> <p>15/40 degree rule Rehearsals</p>	<p>CoC, OC, PL, PSG, and SQD LDRs</p> <p>CoC, OC, and SQD LDRs</p>	<p>L</p> <p>M</p>
11. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED (CIRCLE ONE): LOW MODERATE HIGH EXTREMELY HIGH			12. RISK DECISION AUTHORITY: LTC John Smith, BN CDR		

Information-Focused Solution

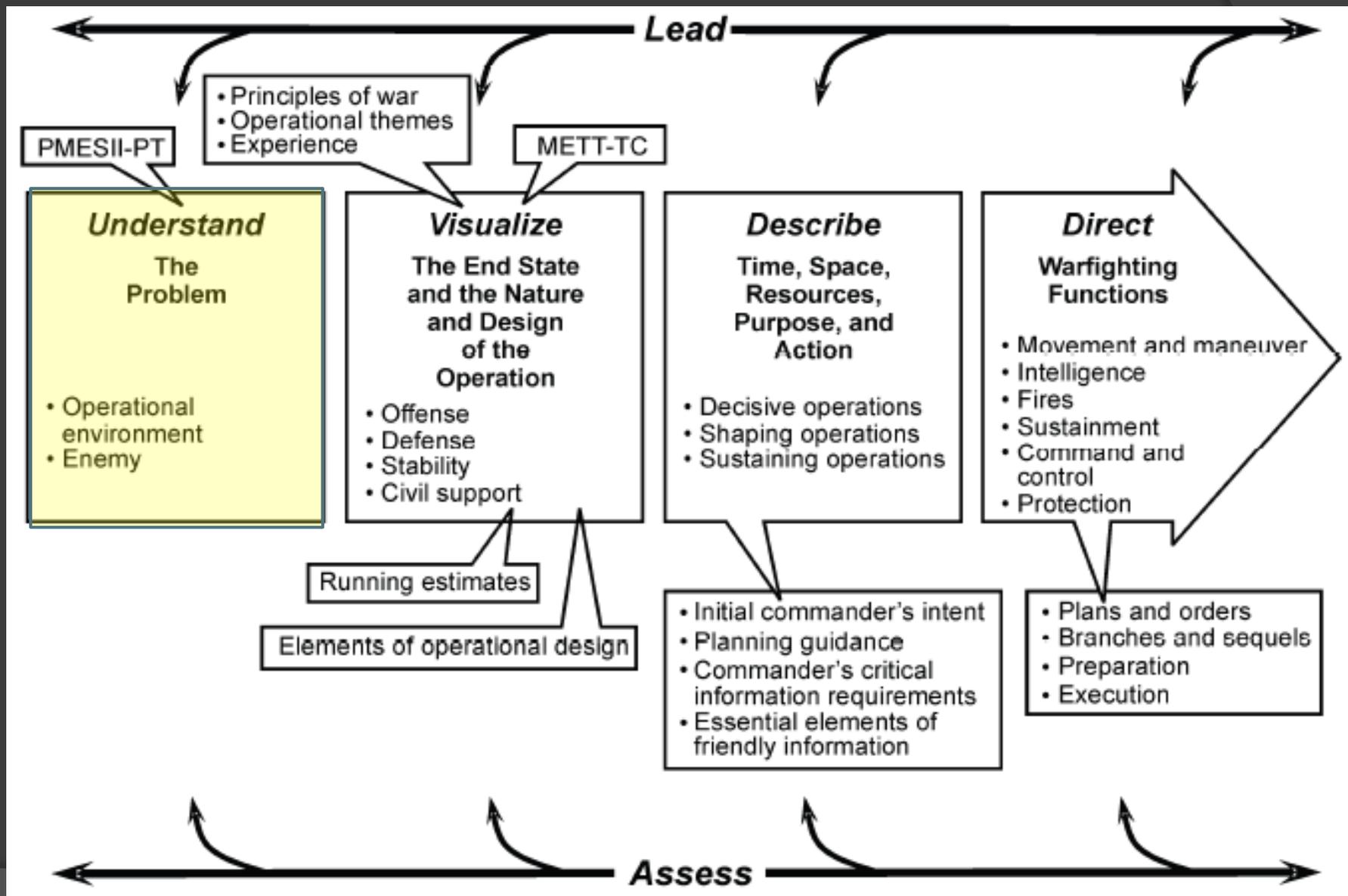


Arthur Wellesley, 1769 - 1852

"All the business of war, and indeed all the business of life, is to endeavor to find out what you don't know by what you do; that's what I called 'guessing what was at the other side of the hill.'"

Wellesley, Arthur (1st Duke of Wellington).

Battle Command:



Information Classification

Priority Information Requirements:

- Intelligence needed to understand the adversary or the operational environment.

Friendly Forces Information Requirements:

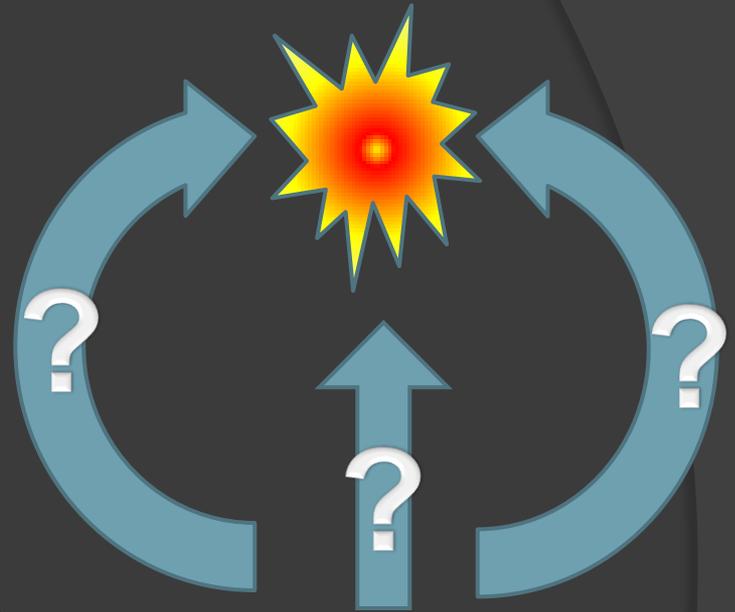
- Intelligence needed to understand the status of friendly forces or supporting capabilities.

Essential Elements of Friendly Information:

- Critical aspects of friendly operations that, if known, would compromise, lead to failure, or limit success.
- *Protected through military deception & counter-intelligence*

Mission Orders

- Task organization
- Commander's intent
- Concept of operations
- Mission of the force
 - who, what, when, where, and why
- Subordinates' missions
- Essential coordinating instructions.



A technique for completing combat orders that allows subordinates maximum freedom of planning and action in accomplishing missions and leaves the “how” of mission accomplishment to subordinates, guides initiative.

Resource Allocation



Commanders allocate enough resources for subordinates to accomplish their missions. In the context of mission command, commanders consider information a resource, and share it through all levels of command.